

OLPC'S TABLET  
FOR TYKES

THE NICHE-FILLING  
DROID ULTRA

TIVO'S SPEEDY  
ROAMIO PRO

# DISTRO

083013 #105

engadget



**The Tale  
of the  
Amazing  
Multi-  
Colored  
E-Paper  
Display**

**AND WHY WE'RE  
STILL READING IN  
BLACK-AND-WHITE**



TAP TO CONTINUE.

# ISSUE 105

DISTRO

08.30.13

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# COLOR COMMENTARY

DISTRO  
08.30.13

EDITOR'S  
LETTER

**THERE'S A VERY GOOD** chance you're reading this on a tablet. Distro is, after all, first and foremost, a tablet magazine. There's also a reasonable chance you're reading this on a computer. Distro works on Windows 8; we have a platform-neutral PDF version; and most of what we publish in Distro also appears on Engadget. There is, however, almost no chance that you're reading this on a color e-book reader (no, not a color tablet; an e-paper reader). And that's too bad.

In this week's Distro, Sean Buckley tells the story of color e-paper, a once-promising technology that simply couldn't make it in a tablet-centric world. Despite years of development work and the tantalizing promise of high-resolution, daylight-readable, low-power displays, color e-paper was rendered an also-ran once the iPad began gaining popularity and low-cost Android tablets followed suit. Major e-reader makers including Amazon, Barnes & Noble and Kobo, all released their own color tablets — at prices be-

low their \$300-plus color e-ink competitors. That strategy wasn't without its fallout; B&N eventually got out of the tablet market, and Kobo continues to struggle to gain market share in the US. But color e-book readers fared even more poorly, and color e-paper's future is now tied to other devices, such as smartwatches.

While this isn't a terrible scenario for consumers — reading an e-book on something like the \$229 second-generation Nexus 7 is certainly a better experience than using the long-discontin-






The OLPC XO tablet sans its rubberized green shell.



OLPC has done wonders to advance public discourse about the importance of bringing technology to underserved children in the developing world, the company hasn't always been successful with its actual products. And, as Brian Heater points out in his review, the XO Tablet, designed for mainstream first-world consumers, is something of a disappointment. The \$149 Android tablet, clad in OLPC's trademark green rubber, is, as Brian points out, more expensive than some better tablets, and has an uneven

ued, Triton-based \$530 Hanvon reader — it's not without its downside. Try using the Nexus 7 on the beach. Or for more than 12 hours without looking for an AC outlet. For those moments, we're happy to have grayscale e-book readers like the Kobo Aura — but Distro looks so much better in full color.

Speaking of tablets, this week's Distro takes a close look at the XO Tablet, the latest offering from the pioneering One Laptop Per Child group. While

app selection, making it a tough choice for parents, despite a user interface that provides “a unique approach to helping broaden kids' knowledge and encourage curiosity.” That, says Brian, is “a bummer for a company with such a great cause.” 

MARC PERTON  
EXECUTIVE EDITOR,  
ENGADGET



# HYPERZIP, HYPERSTARTER, OEMS OVERBOARD AND CABLE SLACKERS



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INBOX



## IS HYPERLOOP LOOPY, OR THE FUTURE OF PUBLIC TRANSPORTATION?

ISSUE 103,  
AUGUST 16TH, 2013

“As I feel with every passenger train moving a fair distance, moving cargo should be the main focus. This system would work perfect for a mix of cargo and passengers, and moving cargo would be the perfect way to do the testing and work the kinks out before risking lives.”

—RUM\_HAM

WINDOWS RETREAT  
ISSUE 103,  
AUGUST 16TH, 2013

“Most [of the] OEM’s jumping ship is actually a good thing, that way Microsoft can price their Surface RT more competitively.”

—BRRUNOPT

“We should just do a giant zip line. Strap me in!!! I’m going to LA!!!”

—FRAWLZ

“I was driving cross country and back earlier this week, and a fair amount of the way I was thinking how much nicer the trip could be on a high speed train. This has got me thinking about a network of Hyperloops across the US. It would completely

change how we commute. And the first step is a system between two major cities, such as LA and SF. If a Hyperloop system just connected between major cities, then it’d be possible to build a system going from SF to Washington DC in about four hours.

At this rate, between Tesla Motors, SpaceX, and the Hyperloop plans, I fully expect Elon Musk to be remembered as the



man who modernized transportation.”

— FLAGEZOOKE

**HYPERLOOP:  
WE CAN DO THIS**  
ISSUE 103,  
AUGUST 16TH, 2013

“I can’t say anything negative about it. California is the perfect state to do this. There is just way too much distance between LA and San Francisco to drive, and flying is a joke these days. For all those trying to point out the negatives about this (still very much) concept, Musk is already aware of every factor we can think of. He’s way ahead of us. He knows about the earthquakes and how they could impact everything and he commented on it. I even thought maybe if someone wanted to sabotage the loop in some way that there would be a fail-safe system in place to safely stop the transport if there is a disruption or obstruction on the track. Where I live, I personally would just like to have a high-speed rail infrastructure in place to travel on a train that goes faster

than 60 mph to places within my state.”

— A.B.

“Put it on Kickstarter - I’ll contribute...”

— ARUPAEO

**THE SPACES BETWEEN**  
ISSUE 103,  
AUGUST 16TH, 2013

“Great to see some South African coverage from Engadget. Would be great reading some more of it in future!”

— LYDONMCG

“Actually, South Africa is very up to date on [mobile] devices. We have 3G and even LTE in the inner parts of our cities. We have the latest smart-

phones and computers. But the only problem is that we have only one cable ISP, and they don’t upgrade their speeds or lay more cables, for they have no competition to keep up with. So our cellular networks are faster than our cabled networks.”

— CHRISTIAANLOUW52

“Bring on the tech for the world, it’s about time we start working as a whole for the greater good.”

— ATHLONS2K

“Very interesting. Heading that way in October. Perhaps I’ll get to experience the TV internet lines and can report back on the performance.”

— IZLANDER

**DIGITAL STORM VELOCE**  
ISSUE 103,  
AUGUST 16TH, 2013

“Good review. Sounds like a lot of potential but ultimately can’t quite keep up. And that price seems a bit excessive to deal with the daily headaches. Perhaps version 2 will be better. Wouldn’t take much to fix it, it seems.”

— JUSTINI





# ENTER

DISTRO  
08.30.13

EYES-ON

## BLUE MICROPHONES NESSIE

CLASSIC  
AESTHETICS

*Tap for detail*

HEAD  
ADJUSTMENT

BASE  
CONTROL

### ADAPTIVE RECORDING

You can't mention desktop recording without discussing Blue Microphones' line of USB audio gadgets. The company is known for well-designed gear and the most recent addition is no exception.

The Nessie not only looks dapper, but also touts adaptive sound-processing modes in an effort to improve recording with one tick of a toggle switch.

**THE DAMAGE: \$100**



# ENTER

DISTRO  
08.30.13

EYES-ON

## BLUE MICROPHONES NESSIE



### CLASSIC AESTHETICS

Blue's eye for design is apparent here once again. The Nessie takes cues from classic audio gear with just the right amount of modern flare.

PHOTOGRAPHS BY WILL LIPMAN





# ENTER

DISTRO  
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EYES-ON

## BLUE MICROPHONES NESSIE



### HEAD ADJUSTMENT

The microphone portion of the Nessie is situated on a serpentine, adjustable head that allows for fixing the unit just so in order to capture a quality track.

PHOTOGRAPHS BY WILL LIPMAN





# ENTER

DISTRO  
08.30.13

EYES-ON

## BLUE MICROPHONES NESSIE



### BASE CONTROL

A rotating ring on the base serves as the volume control for headphone monitoring, while a light around it indicates mute status.

PHOTOGRAPHS BY WILL LIPMAN





# SONY ALPHA A3000

**Sony's managed** to duplicate mid-range DSLR functionality in its NEX series of mirrorless cameras, but while experienced photographers recognize the value of such a device, amateurs looking to step up from a point-and-shoot often opt for a full-size DSLR. The reason, according to Sony reps, is that these users simply assume that a larger camera with a familiar design offers better image quality and performance. So, to suit these misinformed customers, Sony's created a

**PRICE: \$399**

**AVAILABILITY: SEPTEMBER 2013**

**THE BREAKDOWN: SONY GOES AFTER ASPIRING PHOTOGRAPHERS WITH A CAMERA MERGING ILC FEATURES WITH DSLR LOOKS.**

mirrorless camera that looks like a DSLR, but offers the feature set — and price tag — of an entry-level compact ILC. The company's first attempt at winning over this broad demographic is the Alpha A3000. Internally, it's very similar to the NEX-3N, featuring

a 20.1-megapixel APS-C sensor and E-mount lens compatibility. There's a mode dial, Multi Interface Shoe, pop-up flash and an eye-level electronic viewfinder. It also ships with a black version of Sony's standard 18-55mm f/3.5-5.6 kit lens.

We spent a few minutes with the A3000, and while this model wouldn't be the best fit for photographers who understand the appeal of mirrorless cameras, it will likely appeal to the users Sony's aiming at here. It's a nice camera for sure, and a great value at \$399 with a lens. While small and light for a DSLR, it feels bulky for a mirrorless camera, but that's kind of the point. It's a reasonable choice for shooting sports, with a 3.5 fps consecutive shooting mode, and it can snap 1080/24p video clips (with autofocus). There's a 0.5-inch color viewfinder that's adequate, but not particularly fantastic, a 230k-dot, 3-inch fixed LCD and Sony's typical NEX user interface for adjusting capture and WiFi settings.



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HANDS-ON



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**PRICE: \$99**

**AVAILABILITY:**  
**OCTOBER 2013**

**THE BREAKDOWN:**  
**WACOM'S**  
**LATEST STYLUS**  
**BRINGS MUCH OF**  
**ITS PRO PEN'S**  
**FUNCTIONALITY**  
**TO iOS TABLETS.**

# WACOM INTUOS CREATIVE STYLUS

**Recently,** Wacom unveiled its latest tablet pen — the Intuos Creative Stylus — alongside a trio of Cintiq Companion standalone slates. The stylus is indeed a departure from the regular ol' scribbling units that we've seen popping up all over. This time around, the Intuos Creative Stylus draws much of its look and feel from Wacom's Pro Pen (or Cintiq Pen) with its on-board buttons, soft grip and recognizable shape.

Like that Pro Pen that we spent some quality time with earlier this summer, the Intuos Creative Stylus ships with a carrying case that sorts extra rubber nibs and a AAAA battery replacement, and safely stows the gadget itself. Anyone who's using an Intuos pen tablet or Cintiq pen display will be able to get cozy pretty quickly here — a lot easier than with other, less feature-packed styli anyway. We can see folks who aren't yet willing to splurge for a Cintiq Companion using one of these alongside a third- or fourth-gen

iPad or iPad mini they already own.

Once we inserted the battery, pairing the stylus with an iPad mini took only about a minute. The device works without implementing the Bluetooth connectivity, but doing so enables the palm rejection, clickable shortcut buttons and all 2,048 levels of pressure sensitivity. Those shortcut buttons perform as expected and the pressure levels are nice when using certain tools that play well with variations in force — like regular ol' pencil for shading.

The one aspect that we're not so pleased with is the stylus' tip. We'd prefer a \$99 connected unit to sport a nib similar to the regular Pro Pen or Bamboo Stylus feel. Sure, we aren't trying to create finished art here, but a more pen-like tip would make adding small details a bit easier and improve accuracy overall. For now, this device is more like drawing with a piece of chalk or a used Sharpie than a fine tip pen or pencil.







# SONY NEX-5T



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**We assure you,** this camera is not the NEX-5R. Announced alongside three new E-mount lenses and the A3000, it's actually Sony's new NEX-5T. This shooter's unique feature is the addition of NFC for tap-to-device transfers of videos and photos — a nice complement to the WiFi connectivity. Aside from that, it's pretty similar to its predecessor. Internally, you'll find the same 16.1-megapixel APS-C sensor with a maximum ISO sensitivity of 25,600 and hybrid phase- / contrast-detect autofocus for still images.

The outside houses the familiar 921k-dot, 3-inch touchscreen (with 180 degrees of rotation), a rear-set navigation dial and a function button (both programmable) adjacent to the shutter button. Photographers and videographers alike should be pleased with 1080/60p video capture and continuously focused 10-frames-per-second burst shooting. This NEX can also handle Sony's various Play Memories Camera Apps for extended versatility. The NEX-5T is set to launch this September in white, black and silver for \$700 with a 16-50mm pancake powered-zoom lens, and \$550 for just the body.

**PRICE: \$550 (BODY ONLY) & \$700 (KIT)**

**AVAILABILITY: SEPTEMBER 2013**

**THE BREAKDOWN: THE SIBLING OF THE NEX-5R WIELDS NFC TAP-TO-DEVICE SWAPPING FOR CAPTURED SHOTS AND FOOTAGE.**



# BLACKSUMAC PIPER



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**Home automation** and security cameras seldom combine elegantly, especially for apartment dwellers who can't rewire their living spaces. Blacksumac, however, believes it can seamlessly meld those technologies through its upcoming Piper hub. The device links both a fisheye lens camera and environmental sensors to a Z-Wave-based home automation system. Out of the box, it can watch for intruders, listen for (or produce) loud noises and monitor local conditions like temperature. Once Z-Wave peripherals are involved, you can program sophisticated triggers and responses: Piper can send a warning when a door opens, for example, or turn on air conditioning when it's hot.

The hardware itself is sleek, particularly for a crowdfunded project. It's roughly the size of a bookshelf speaker, and is stylish enough to look appropriate on a corner table or mounted on a wall. There's both a microphone and speaker inside, and it has a battery backup. Blacksumac tells us that Piper should last for hours of basic monitor-

ing on battery alone, although a power cut likely means that you're also without internet access — the gadget won't do much during a sustained blackout.

You're really here for the software, though, and that's where Piper shines. The pre-release iOS app (there's also Android support) makes it easy to check the hub's status, control Z-Wave devices, view recent events and set up rules for when you're home or away. Alerts can reach individuals or whole groups, and you can speak directly to anyone near the system. Piper makes particularly good use of its camera's ultra-wide-angle lens — you can pinch to zoom into a distant scene, view a panorama or split the view into four controllable sections. The app will also let you control any lighting directly from the live video mode. **D**

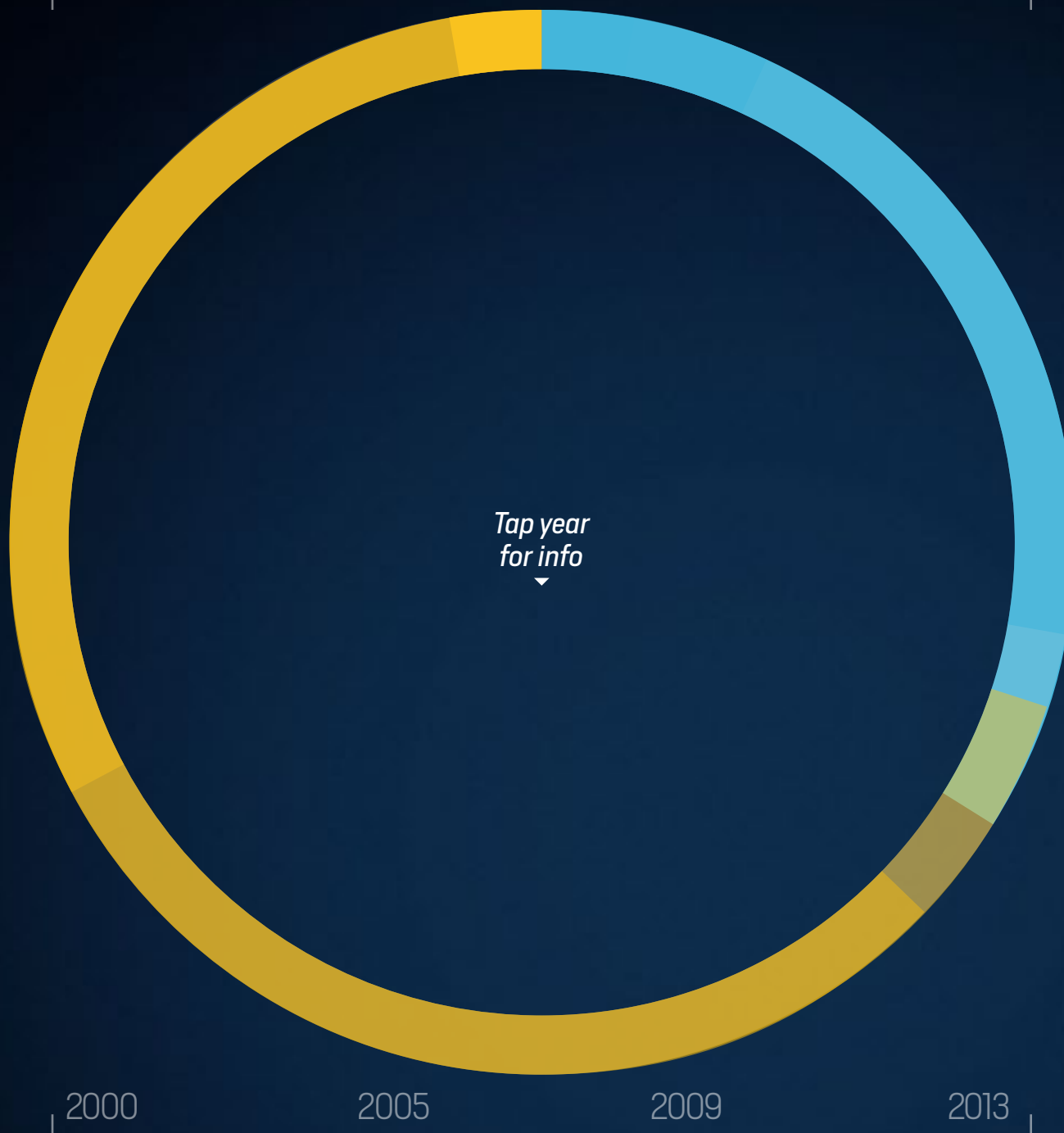
**PRICE: \$209+**

**AVAILABILITY: NOVEMBER 2013**

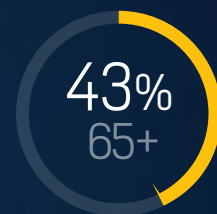
**THE BREAKDOWN: PIPER USES AN APP AND Z-WAVE TECH TO MONITOR BOTH HOME AUTOMATION AND SECURITY.**



BROADBAND ADOPTION OVER TIME



BY AGE GROUP



HOME INTERNET ACCESS



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## The Broadband Build-Up

Dial-up, yeah, some people are still using it. Overall though, home dial-up use for American adults has plunged from 34 percent in 2000 to 3 percent this past May, while broadband adoption has steadily increased, hitting 70 percent penetration. Age plays a big part here, with 80 percent of data-consuming Millennials hooked up in their homestead and only 43 percent of the 65-plus crowd using broadband. Smartphones are also edging in as an alternative internet solution for the home, with increasingly fast LTE-type connections making it an almost palatable substitution. — *Jon Turi*





BROADBAND ADOPTION OVER TIME



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HOME INTERNET ACCESS



BROADBAND + SMARTPHONE



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SOURCE: PEW RESEARCH

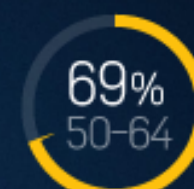




BROADBAND ADOPTION OVER TIME



BY AGE GROUP



HOME INTERNET ACCESS



BROADBAND + SMARTPHONE



BROADBAND ONLY



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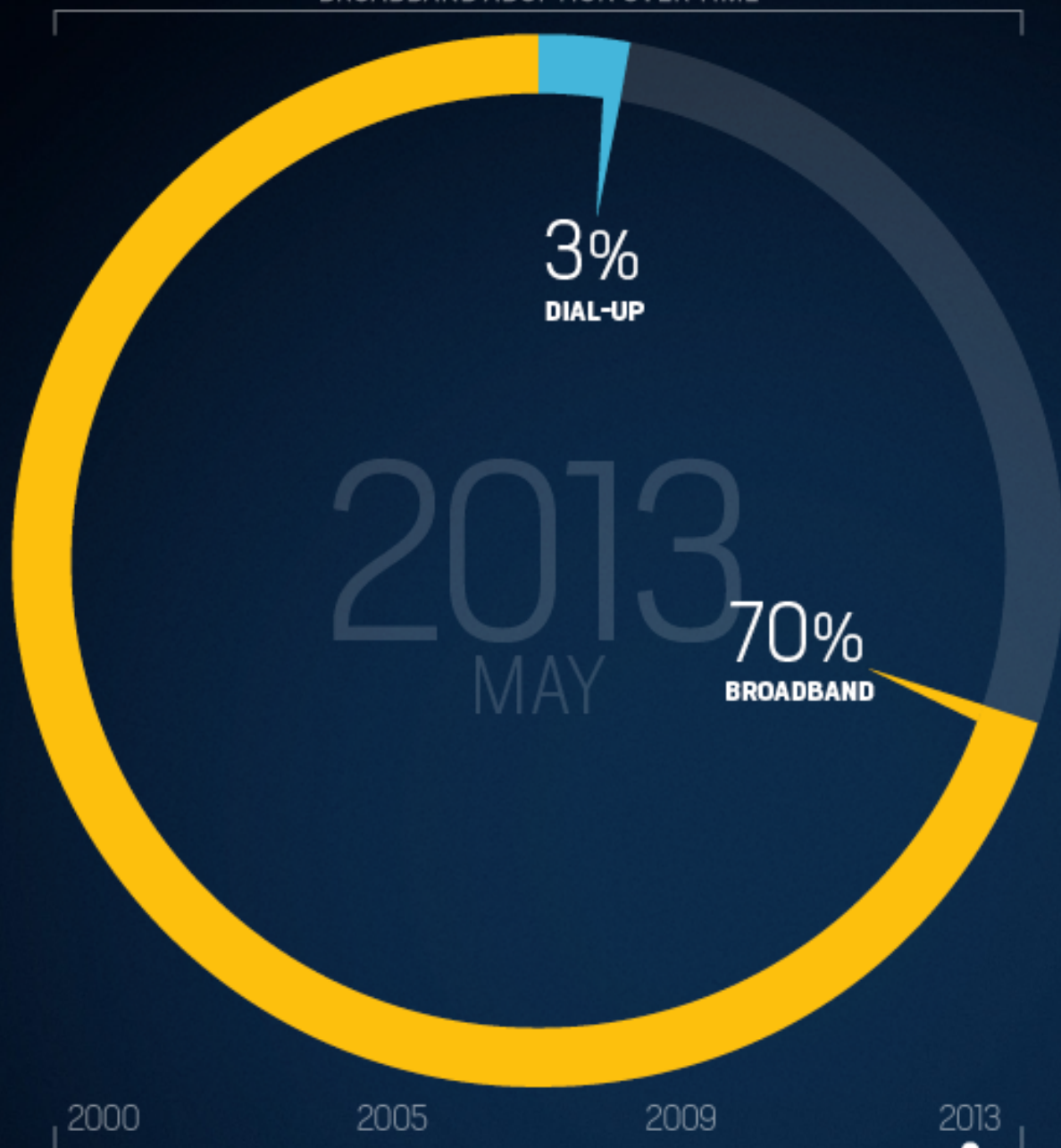


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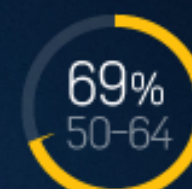
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HOME INTERNET ACCESS



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SOURCE: PEW RESEARCH





# The Truth About Marissa Mayer: An Unauthorized Biography

By Nicholas Carlson  
*Business Insider*

**There's been no** shortage of pieces written about Marissa Mayer since she landed the top job at Yahoo last year, but none are more exhaustive than this profile — or “unauthorized biography” — from Nicholas Carlson. Very much a long read, it covers the gamut from her 13-year stint at Google (and how she wound up there), to the complicated series of events that led to her hiring at Yahoo and what she's done at the company since taking over — not the least of which being the \$1.1 billion acquisition of Tumblr, which is also recounted in great detail here.

YAHOO/FLICKR

**Nearly a Decade Later, the Autocomplete Origin Story: Kevin Gibbs and Google Suggest**  
By Liz Gannes, *All Things D*

Ever wonder what drives those suggestions that fill in the search box before you finish typing? *All Things D*'s Liz Gannes set out to discover just that, and the result is this piece that charts the history of Google Suggest, as it came to be known, with some first-hand perspective from its creator.



Click on headlines to read full stories

**At Apple, Tim Cook leads a quiet cultural revolution**

By Poornima Gupta and Peter Henderson, *Reuters*

With another big product launch coming up, *Reuters* takes a look at the state of Tim Cook's leadership at Apple two years into the job. While that doesn't include an interview with Cook himself, it does include some with many around him (some named and some not), who help paint a picture of his management style and what the company is like today.

**Zuckerberg Explains Facebook's Plan to Get Entire Planet Online**

By Steven Levy, *Wired*

Steven Levy talks to Facebook CEO Mark Zuckerberg about his Internet.org initiative, an effort to spread internet connectivity around the world that's also drawn its share of criticism, both for its motives and the way it is being presented.

**The World's Most Notorious Micronation Has the Secret to Protecting Your Data From the NSA**  
By Thomas Stackpole

*Mother Jones*

The rise and fall of HavenCo, a would-be off-shore data haven, has been well-chronicled, so it shouldn't come as much of a surprise to see it back in the news in this age of one new NSA revelation after another. As Thomas Stackpole explains in this piece for *Mother Jones*, however, that's not without cause, with HavenCo 2.0 now aiming to fulfill that original goal.





# THE SMARTWATCH MICROSOFT NEEDED YESTERDAY



DISTRO  
08.30.13

FORUM

SWITCHED  
ON

BY ROSS RUBIN

**The announcement** of Steve Ballmer's impending retirement from Microsoft cast a spotlight on the company's transition to becoming a devices and services company. While it's unclear how progress toward this goal will be measured, the success model for the "devices" part of its quest is Apple. (Indeed, Apple, leading with iCloud, is seeking to diversify into more of a "devices and services" company itself.)

Apple's current revenue champions — the iPhone and iPad — are in categories that Microsoft recognized the potential of long before Apple's market entry. When the US smartphone market consisted of Microsoft, Palm and RIM, Windows Mobile had been powering smartphones — and doing respectably in terms of US market share — for years before Apple changed the game. Now, Windows Phone scrapes by with a few percentage points of the market. And the

Tablet PCs that ran Windows a decade ago were introduced as the future of the notebook. While today's Windows tablets and convertibles are much thinner and lighter than they were back then, it's amazing to see how recalcitrant PC vendors have been in their design, with few pursuing pure slates and some using twist-hinges similar to those used in Tablet PCs.

Why is this? In both cases, by the time Microsoft responded, Apple had already established a huge beachhead. Devices using Microsoft products had to either risk appearing as copies or be pushed to more of a niche focus (41-megapixel cameras, anyone?) in the name of differentiation.

A head of speculation now points to a watch as the next target of Apple's ecosystem expansion. As Google understands well with Google Glass, wearables represent perhaps the last opportunity short of implantables (or perhaps "tattoos" like the kind MC10 is creating) to intercept the smartphone as a ubiquitous personal digital presence.






“It’s amazing to see how recalcitrant PC vendors have been in their design, with few pursuing pure slates and some using twist-hinges.”

Here, too, Microsoft was an early believer. Its MSN Direct / SPOT watches combined wireless connectivity and glanceable information in an era before today’s high-speed wireless data, high smartphone penetration, low-powered Bluetooth and sunlight-optimized displays that characterize the current crop of smartphones.

There have been occasional whispers that Microsoft is indeed working on a modern smartwatch, but to get it out a year or two after an Apple watch hits will be too late. Clearly, whatever Apple’s working on must be a signifi-

cant departure from the focus of the dozen or so smartwatches that many Engadget readers have surely helped fund on Kickstarter and Indiegogo.

While products such as the Zune HD and Surface may have flopped commercially, they represented solid — certainly thoughtful — designs. Microsoft needs to drive that level of design into a watch or other wearable that plants the seeds of what it can claim is the post-smartphone era. It doesn’t even have to be much more complex than something that would display select Live Tiles from a Windows Phone. Microsoft could release apps to make it compatible with iOS and Android, but of course it would work best with Windows Phones and PCs. A successful smartwatch would certainly have a halo effect on smartphones.

In corporate software, Microsoft was once the master of leveraging one product to sell another. Office helped sell Windows and Windows clients paved the way for Windows servers. But for the last decade in consumer hardware, it’s been Apple that’s executed well in that respect. The iPod helped sell Macs and the iPhone paved the way for the iPad. If it doesn’t establish a wearable now, the SPOT watch may join the Tablet PC and Windows Mobile phones as categories where Microsoft got to the dock early, but ultimately missed the boat. 



# THE BRAIN MODEM IS HERE



DISTRO  
08.30.13

FORUM

THIS IS THE  
MODEM WORLD

BY JOSHUA FRUHLINGER

## Consider this headline:

“Researcher controls colleague’s motions in 1st human brain-to-brain interface.”

This.

Happened.

University of Washington nerds put an electrode-speckled cap on Rajesh Rao and attached it to a computer that was connected to the internet. They then put Andrea Stocco in another room on the other side of the University of Washington campus, plopped another electrode cap on him and connected that to a computer.

Then — you might want to sit down — Rao played a video game, but instead of hitting a keyboard to control the game, he thought about doing so and sent a signal to Stocco over the internet. Stocco wasn’t watching the game, but he was still able to beat it as his brain cap received Rao’s digital signals. The signals, he said, felt like nervous ticks.

Stocco then said this: “The internet was a way to connect computers, and now it can be a way to connect brains. We want to take the knowledge

of a brain and transmit it directly from brain to brain.”

I’ll pause for a moment while you wrap your head around that one. Perhaps you’re not as impressed by this as I am, but if I understood what these guys at the University of Washington did, humans have essentially designed the first brain-to-brain internet modem.

Sure, all they did was get one guy to make another guy twitch his finger and hit a space bar, but I’m pretty sure the first experiments with computer modems were just a couple people saying, “Hi. A/S/L?” to one another at 50 baud.

You may be thinking, “Big deal. So we can make other people twitch their fingers. Maybe this’ll be useful for medical research and prosthetic technology, but I’m not sure where this could really go.” You’d be right if they were only experimenting with the motor cortex, but one of the researchers told Reddit that the TMS (Transcranial Magnetic Stimulation) machine could also be used to stimulate sight or sound by positioning it on different areas of the scalp. In short, this adds multidimensionality to



“Stocco wasn’t watching the game, but he was still able to beat it as his brain cap received Rao’s digital signals.”

the experiment. It adds a possible language. It adds logic and a future.

The resolution — if I may call it that — of the technology is very low at this stage. Imagine the very first *Pong* game compared to where we’re at with immersive 3D polygons. And we’re not even at *Pong* yet, but we’re at that stage when Nolan Bushnell told Allan Alcorn, “We could make *Pong*.”

You can be sure that these researchers will explore other senses and other humans, and will quickly learn how to accelerate this “human modem” technology to do all sorts of amazing things — things we can only now begin to conjure. At least I hope so.

With that said, here are three possibilities I came up with. Just for fun.

## **1 A TOTALLY DIFFERENT ENDING TO *AIRPLANE!***


I’m being a bit silly in my example here, but remember in *Airplane!* when the guy in the airport was telling the girl in the plane how to land? Well, imagine if there was a TMS machine in planes, and remote pilots could direct virtually anyone to operate the plane. Of course, all of this could be moot with remote-control technology anyway, but it’s fun to think of the ways humans could remotely control others.

## **2 SMELL-O-VISION, FINALLY!**

As researchers nail down other senses and add some resolution, you can bet that we’ll ultimately be able to “play back” senses and actions, because before they reach the target, the signals are converted into digits. These digits can — and will — be recorded and packaged into little virtual vacations. Cyberpunk is here!

## **3 REMOTE TRAINING**

Want to learn the best knife techniques from top chefs around the world? Build muscle memory as they plug into an entire classroom of students and literally guide them through the perfect julienne. Trying to gain confidence as a mountain biker on those technical descents? Let Steve Smith plug into you over a wireless connection as he guides you down that hill that’s been turning you into a kitten. Come out the other side knowing that you’ve conquered the hill!

Clearly I’ve taken this technology a bit too far, but it’s fun to imagine what we can do with such a groundbreaking discovery. Here’s to hoping they get the support and funding they deserve. I, for one, welcome the brain modem. 







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# REVIEW

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## TIVO ROAMIO PRO



The **TiVo Roamio Pro** ushers in new functionality alongside the first major hardware release after a lengthy hiatus  
By **Ben Drawbaugh**

**It's been three** and a half years since the last major TiVo release and while the company has offered some new features since — via hardware revisions, software updates and accessories — we're very excited to tell you that TiVo is back. The three new TiVo Roamio DVRs range in price from \$200 to \$600 (plus service), all with at least four tuners and built-in WiFi. And the Pro and the Plus have integrated TiVo Stream functionality. The cool new trick is out-of-home streaming for both live and recorded shows, with the ability to download shows to your iOS de-





vices while away from home. (Note: this feature isn't coming to the Roamio until this fall, so we tested it with a TiVo Stream instead). There's also a new remote that no longer relies on IR, as well as a refreshed user interface, which includes the What to Watch Now feature and new Netflix and YouTube apps — that launch quickly now. We'll get into all the highs and the lows in just a moment, but we're pretty confident in saying these are TiVo's best boxes to date.

## HARDWARE

The connections and form factor of the TiVo Roamio Pro are very similar to that of the Premiere line: a CableCARD slot, one coax connector, two

USB ports, Ethernet, eSATA, Toslink, analog audio / video and HDMI out. What's new are the internals, including 802.11a/b/g/n WiFi and a new chip (a Broadcom BCM7241) that has the power to speed up the TiVo user experience, as well as launch third-party apps quickly and stream content to other devices. All at the same time. There are also more tuners and bigger hard drives. At the high end, we have the Pro for \$599 with six CableCARD tuners and 3TB of space. Next is the Plus, which also has six tuners, but only 1TB of space for \$399. At the other end of the price range is the standard Roamio for \$199, which only has four ATSC or CableCARD

The Roamio has stepped up its design since the Premiere.



tuners, a 500GB hard drive and no built-in Stream functionality or MoCA. None of the new models support analog cable. These limitations are not a big deal for most, but some will be disappointed. Cable-cutters certainly won't be, though; the ATSC model is the box they've been waiting for, as the old ATSC model only had two tuners and didn't support the TiVo Mini.

The fit and finish of the new box is appealing, with the cheap plastic of the Premiere gone and a nice, textured gray material with a glossy, piano-black faceplate taking its place. Oh, the face. Yeah, the TiVo guy on the front of the Roamio doesn't have one, which is odd since he isn't faceless on the remote. The other newsworthy additions are the touch-sensitive power button and a new remote finder button; press it and the remote will start emitting the same music as the

TiVo start-up video. The last mentionable change is the recording indicator. Now, there's only a single-circle recording indicator, then five smaller semi-circles off to the right. And the lights on the box are, of course, not so bright that they're distracting, and can be turned off completely via the settings.

The new remote gets its own section, but one aspect we must cover here is the lack of HDMI-CEC on any of the new TiVos. We surely sound like a broken record at this point, but this time around should be much louder, as the missed use case is worse than ever. TiVo obviously recognizes the value in moving away from IR, but by not including HDMI-CEC in the Roamio, the new RF remote must still rely on IR for TV power and volume. This creates a somewhat disjointed experience because you can control the Roamio without any regard for where the remote

Comparing the Pro [top] to its Premiere predecessor.





is facing, but to adjust the volume you must be sure to point it in the right direction. Add in our old points about the prominence of CEC in modern TVs and AV receivers and our dream of being able to turn our TVs on with the great smartphone and tablet apps from TiVo, and, needless to say, we're disappointed. There's the chance that it could be added later, as our understanding is that the lack of CEC in most DVRs has more to do with software than with hardware, but we aren't holding our breath and TiVo isn't commenting.

## REMOTE

The only thing that TiVo releases less often than a DVR is a new remote. The entire Roamio lineup includes the same remote, which means that while the base model also gets the benefits of RF, the top-of-the-line models' remote no longer features a backlight or the ability to learn IR codes (the built-in IR database is very extensive, though). Upon unboxing the remote,

we almost immediately referred to it as the “stubby peanut” — affectionately, of course. It reminds us of the size of the discontinued TiVo Slide Remote, but not quite as short. We were happy with the size of the old ones, but the smaller size does make it a bit easier to reach all the buttons. The other big change is the addition of a “back” button.

The TiVo user experience still doesn't require a back button; this new addition is for the streaming apps like Netflix and YouTube (the back button provides the same function as the left button while in the native TiVo UI). This is undoubtedly the result of a decision by TiVo to no lon-

The Pro comes with a new, more compact remote.





The new  
TiVo remote  
control  
[right] with  
its siblings.

ger optimize the streaming apps for the TiVo experience. Whatever the impetus, it pretty much squashes any hope we might have still had for a congruous user experience.

That being said, it does come in very handy when you leave the TiVo experience for another app; it's less jarring than switching inputs. In most cases. The only other notable button change is the front-and-center repositioning of the guide button, pushing the mute and record buttons aside. We find this very odd, as this button is primarily for those who watch live TV first, as opposed to our TiVo experience of going straight to My Shows

when we sit down — TiVo users typically watch less live TV than most. We would've preferred to see the space used for a shortcut to Watch Now or My Shows, but this is likely an attempt to appeal to those not currently using a TiVo.

The big point of differentiation here, though, is the remote's RF capabilities. No longer do you need to worry about having line-of-sight to your TiVo to

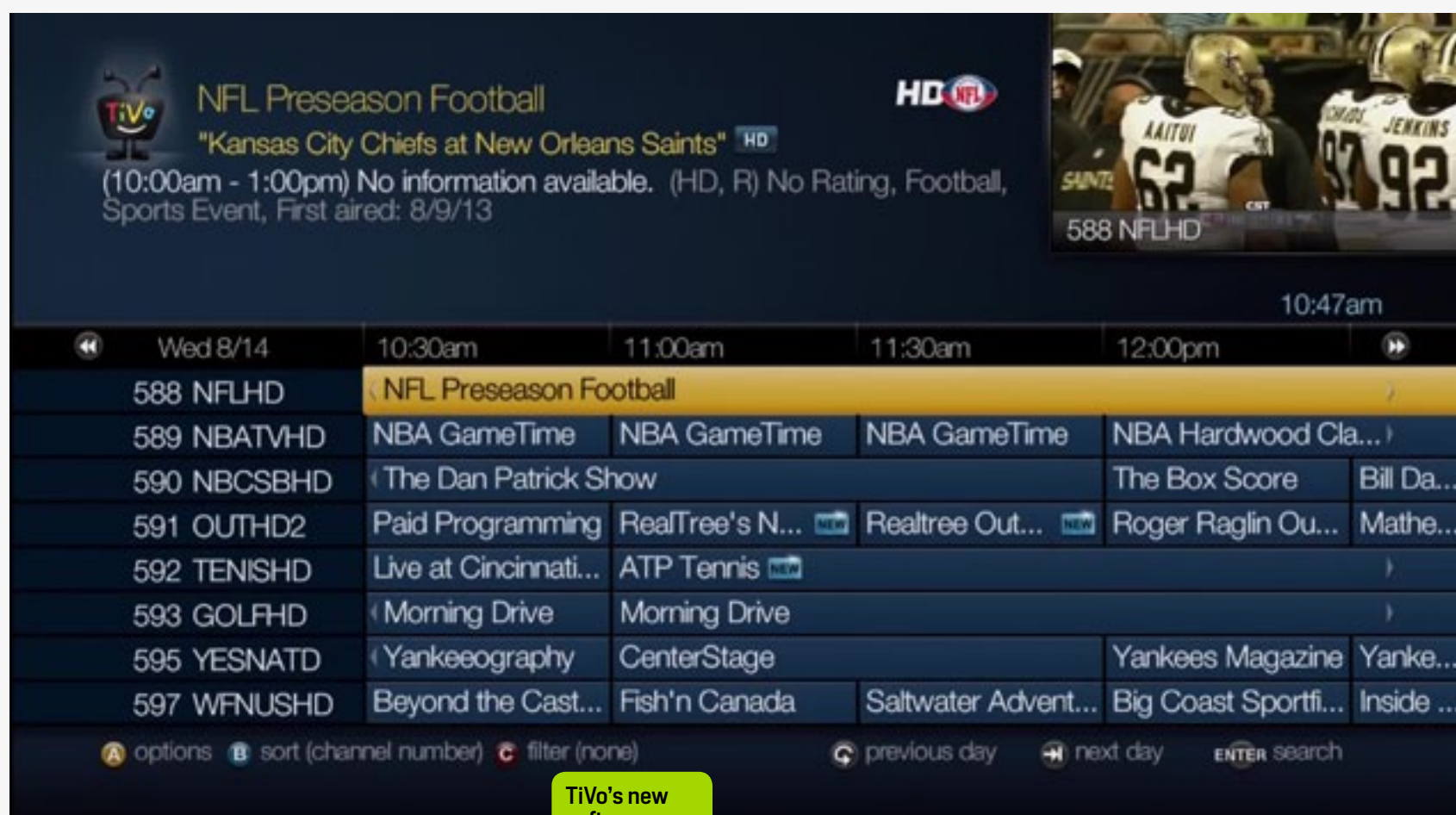
control it, which means you can hide the DVR behind closed doors, or change the channel without moving your hand outside the warm and comfy confines of your favorite blanket. The remote does still emit IR, though, but only to control your TV and AV receiver — as we mentioned before. The Roamio also still features an IR receiver so you can use your old TiVo remote or, say, a programmable one.

## SOFTWARE

With the new Roamio hardware comes a few updates to the software. The entire user interface has been refreshed, which essentially amounts to a darker, almost







black, background instead of blue. The What to Watch Now feature from the smartphone and tablet apps has been added to TiVo Central, but without any configurable options. The really exciting new feature is the long-awaited ability to use the iOS apps to stream and download content from outside the home. This is of course limited by your available throughput, but it's at least easy to set up. It works well enough, but despite having FiOS internet service and LTE on a mobile device, the picture quality of the live stream was still far from what we've come to expect from a Slingbox. We imagine adaptive stream-

**We can't remember ever using a TiVo this fast.**

ing isn't an easy thing and hope the quality gets better in future releases.

That's great and all, but it plays second fiddle to our favorite feature of the TiVo Roamio: its speed. Seriously, we can't remember ever using a TiVo this fast. Perhaps we're just conditioned by years of molasses on the TiVo Premiere. No matter. This one flies; it had no trouble keeping up with us in everything we've tried. Does it lag every once in a while? Sure, but the Roamio is faster than the Premiere in every way; from watching something live, we can play a show from the My Shows list within six seconds versus 16 on the Premiere XL4 (that's five button presses).

That new speed helps with more than just navigating the TiVo native UI. In fact, Netflix launches in less than eight seconds, compared to the 40

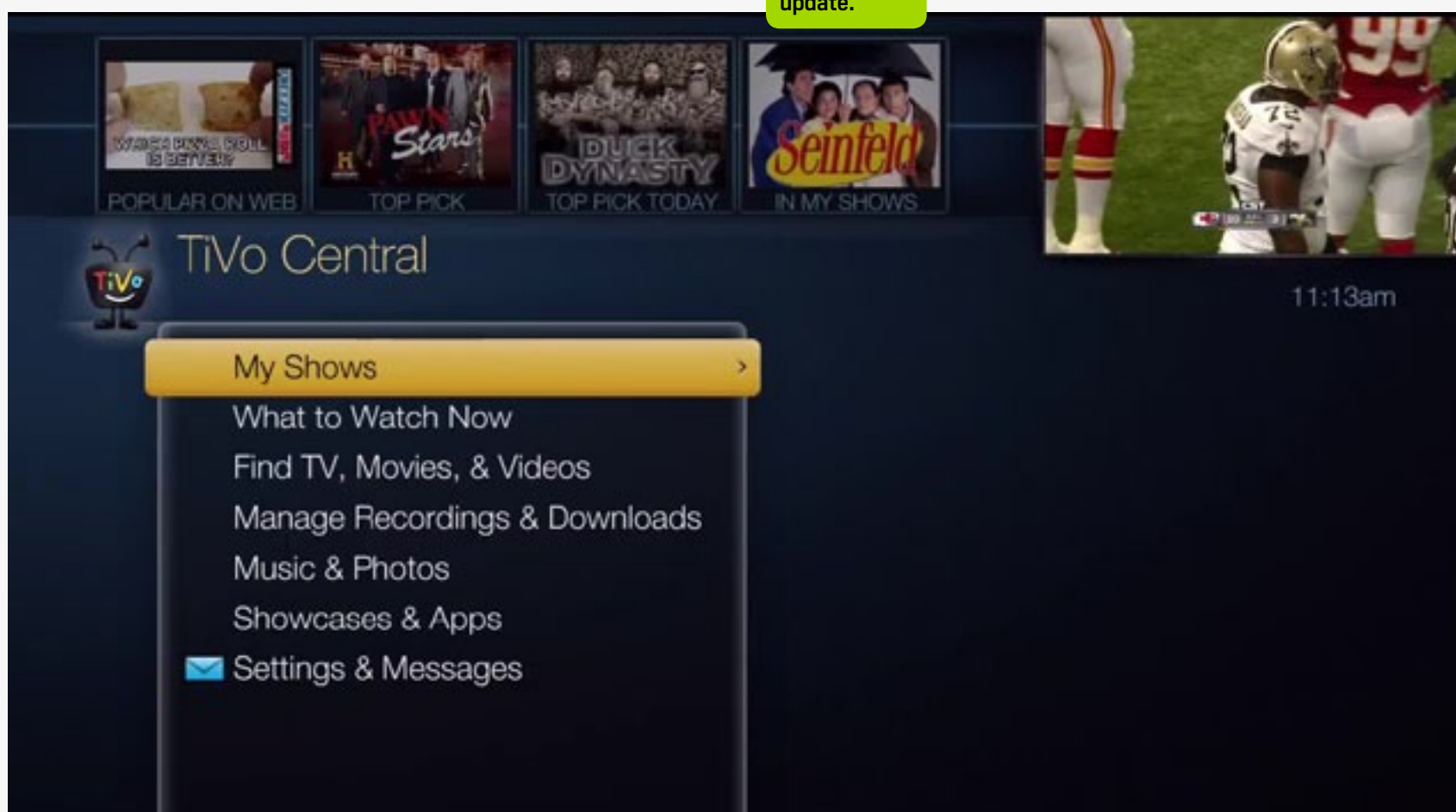


seconds it takes on the Premiere XL4. Speaking of which, the Netflix and YouTube apps have been updated; there is DIAL support, but the apps are still a little behind as the new Netflix Profiles feature still isn't supported. We also really appreciate the fact that now, when you use the TiVo search to find a show, and then choose to watch it from Netflix, it takes you directly to the show rather than to the Netflix search, like it did before. Much appreciated, no doubt, but we still long for the congruous user experience that the Xbox and Apple TV deliver, as well as all the missing streaming content from services like WatchESPN, Vudu, HBO Go, Amazon Prime, Epix, Crackle and CinemaNow. Oh, and it's crazy that the same old, worn-out Amazon Instant app is still being ported along.

Now that we're on to the subject of what we don't like, let's talk about switching DVRs. The out-of-the-box TiVo experience has always left a lot to be desired — especially when Cable-CARDS are involved — but upgrading your DVR should be as easy as upgrading your smartphone. Instead, you have to set everything up from scratch again. At least there is the Season Pass Manager on TiVo.com that'll allow you to transfer your Season Passes (which didn't work for us, but we assume that is a result of our early access). If you're lucky enough that your provider doesn't mark everything as "Copy Once," then you can at least transfer the recordings, one by one, from your old TiVo to your new one.

The other enhancement we were hoping for, that sadly isn't here, is a revamped

While it's still the same, My Shows is due for a fall update.





My Shows. What we would really love is a single list of everything we want to watch — including recordings, live TV and streaming content. But instead, it's pretty much the same as it has been throughout TiVo's existence. We're told there's a new, three-column My Shows view coming this fall, so we look forward to trying that out. We can only dream the user profiles will follow; now that would be a point of differentiation for TiVo.

Managing six tuners works the same way as if there were two or four. The good news is that with six tuners, you should almost never have to use the conflict resolution, which is in desperate need of a refresh (you can't easily select which of the six recordings you'd like to cancel when you encounter a

conflict). You can still maintain a live buffer for each tuner at the same time, perfect for when there are six college football games on at once. TiVo Mini fans will be happy to know that you can now dynamically assign a tuner to a Mini for live TV. So not only does this mean you can still record six shows at once when you have a Mini, but now you can also have up to nine Minis configured to your main DVR — the Mini still does not work with dual-tuner TiVos, though. This may sound like overkill, but really, who ever complained about having too many? The one odd limitation here is that if all the tuners are in use, you still can't join a live session in progress on the Mini. You can, however,

The Pro's new design left the face off of the TiVo logo.



still record the show you are watching live in another room and then watch that recording from the Mini. Not exactly intuitive, but it still works.

## WRAP-UP

TiVo has never been the least expensive option, at least not up front. The ATSC version runs \$199, which is \$50 more than the least expensive Premiere, but that still works out to less per tuner and it has the same recording capacity. Speaking of which, the extra \$200 to step up to the Pro from the Plus, for an extra 2TB of storage, seems like a bad deal. Any of the models could save you money in the long run, though. The potential savings of the cord-cutting ATSC option are obvious, but even compared to renting a six-tuner multi-room DVR from a provider like Cox, buying the TiVo ends up being cheaper, assuming you hold onto it for several years. Most importantly, the value of six tuners and plenty of space

on a DVR can't be underestimated. Having more space and tuners than you need takes a DVR to the next level, to a point where you no longer have to think when you hit the record button.

It took more than three years, but TiVo has finally delivered the DVR we hoped for when the Premiere first came out. The Roamio Pro addresses every major gripe we had, except the lack of HDMI-CEC. The speed improvement alone makes this a must-upgrade for any Premiere owner, and finally gives all the Series3 holdouts a reason to open their wallets. Is it perfect? No. Is it the innovative TiVo we used to expect? No, there are other six-tuner DVRs with ample space already on the market. Is it the best DVR ever released that works with ATSC and / or CableCARD? Absolutely. **D**

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*Ben Drawbaugh is Associate HD Editor at Engadget, an HD snob, father, car guy and mountain biker.*

## BOTTOMLINE

### TIVO ROAMIO PRO

# \$599



## PROS

- Very fast performance
- Six tuners
- Now comes with an RF remote
- Out-of-home streaming now an option

## CONS

- No HDMI-CEC
- Can be pricey with lifetime service
- Out-of-home streaming isn't always smooth
- Upgrading from an old TiVo is still tedious

## BOTTOMLINE

The new TiVo Roamio addresses almost every major complaint we had previously. In short, it's most definitely the TiVo you've been waiting for.





## OLPC XO TABLET



The **XO** tablet delivers an OLPC-curated software experience and a cool case, but will the rugged elite be put off by middling hardware?  
**By Brian Heater**

**I**n late 2007, One Laptop Per Child launched its “Give 1 Get 1” program. While the do-gooder organization had originally shrugged off suggestions that it should offer its XO Laptop as a commercial product, OLPC finally gave in, letting consumers get their own device for a \$399 donation (that price also paid to send one to a child in a developing nation). Unveiled back at CES, the Android-powered XO Tablet marks OLPC’s first proper foray into the consumer space, with the device available for \$149 at major retailers like Walmart and Target. So is it any good?





## HARDWARE

At first blush, the XO is a sight to behold. It screams “kids’ tablet,” rocking a neon green case that harkens back to OLPC’s original hardware. The form factor, too, offers a respite from the weary world of samey slates, with rounded rubber corners and a big ring in the upper-left-hand corner of the case. All of these traits owe a good deal to the input of Yves Béhar; the industrial design rockstar has been on board with One Laptop Per Child for some time now, giving the company’s hardware a unique ruggedness. Take that ring, for example, a flourish seemingly borrowed from his Nook Color / Tablet line, which had a largely vestigial car-

biner in one corner. Here, however, the functionality is clear: it gives tiny fingers a place to grab hold of the tablet.

The rear side of the included case has little Béharian touches, as well. Atop that textured rubber is a big, blue plus sign. Turn the tablet at a 45-degree angle and it forms an “X,” alongside the loop’s “O.” Those nubs also give way to a small and subtle row of X’s at the edge of the loop. Béhar also had a hand in UI design on the device, but his influence on the hardware ends here.

The thing is, for all the charm of its rugged, green rubber exterior, that’s only a skin, a silicone casing that fits snugly around the tablet’s frame. Peel it off to reveal

The XO tablet offers a 2-megapixel rear-facing camera.





the true device inside: a run-of-the-mill budget tablet with a big Vivitar logo stamped on the rear. Incidentally, OLPC's first consumer device also happens to be the first one the company didn't have a direct hand in designing.

Without that skin, the XO Tablet is a chunky thing. Which is to be expected, really: it's a \$149 tablet, destined to wind up in the hands of 3-year-olds. The front of the device is monopolized by a modest 7-inch, 1,024 x 600 display and a whole lot of bezel. Truly, the screen's nothing to write home about. For starters, unlike past OLPC devices, the XO Tablet wasn't designed to be used in sunlight; such functionality isn't as crucial here as it was in many of the developing nations

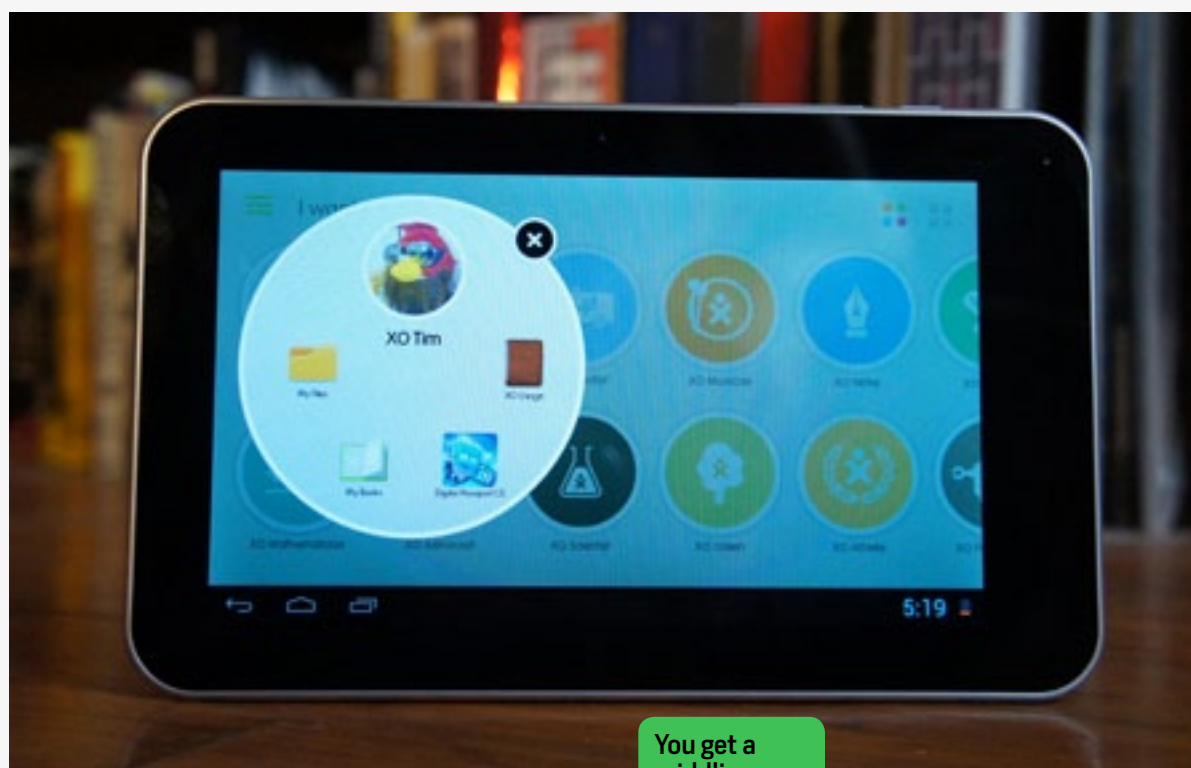
for which the company's earlier products were intended.

On the top of the big black bezel, you'll find a front-facing 1.2-megapixel camera and to the left, a small charging light that lets you know when the micro-USB cable is doing its job. The only two physical keys, the volume rocker and power button, live along the top edge; both are sufficiently large for kid hands. Along the bottom edge is a microSD slot to help you supplement the 8GB of built-in storage. On the right side, meanwhile, you've got your mic, headphone jack, mini-HDMI and that micro-USB socket.

The back of the XO has a similar indented-dot pattern, except, unlike the case, it doesn't

Yves Béhar's  
quirky  
and funky  
silicone  
tablet case.





offer much in the way of grippage. There's also a pair of small speaker grilles up top — as you might expect, they don't really do the pre-loaded “Also Sprach Zarathustra” MP3 much justice. To the left, is a 2-megapixel camera — a bit better than the 1.2-megapixel shooter on the front, but not by much; the photos are just as grainy and low-res as you'd expect them to be. The middle of the back is devoted to the OLPC XO / child symbol and Vivitar logo, a not-so-subtle reminder that OLPC opted not to go it alone this time out.

At the end of the day, we're working with OEMed hardware. The specs on the XO Tablet look awfully similar to those on the 7-inch kids' tablet the company trotted out back at CES, one that has already been outfitted with a number of kids' brands like Hello Kitty and My Little Pony. It's a modestly specced, ruggedized budget tablet

designed for rough-and-tumble kid usage, because, let's face it: however responsible your own rugrat might be, odds are you don't want him spending too much time with your iPad mini. Inside is a modest 1.6GHz dual-core processor. We didn't encounter too many crashes dur-

ing our time with the device, and most apps loaded quickly enough to satisfy kids' short attention spans. Meanwhile, OLPC says the battery should give kids around 7.5 hours of runtime, but in a way that's a moot point unless your child's actually allowed that much uninterrupted screen time.

In the end, \$149 for a tablet is a little difficult to stomach, particularly with better-specced devices like the Hisense Sero 7 Pro currently going for less. And while the Béhar-designed case does help the tablet stand out from the crowd, even going so far as to improve the ergonomics, it's on the software front that OLPC's really hoping to set itself apart.

## SOFTWARE

Fire up the XO and you'll see a lock screen with two choices. Drag the XO icon to the right and enter your password, and you'll be greeted by the standard Android 4.2 home screen. To be







The XO comes with Android 4.2 behind an OLPC skin.

clear, there's a fully functioning Android device here, but if you went out of your way to pick up this tablet, odds are good that you're not in it for the classic Jelly Bean experience. Swipe the other way (and enter the password again) and you'll find yourself inside OLPC's Dreams interface, skinned heavily so as to make the Android experience unrecognizable, save for the familiar toolbar at the bottom.

The words "I want to be an..." are at the top of the page, with a number of merit badge-like icons below, each representing a different career path. There are 15 in all — a pretty solid selection of the sort of things many of us imagined ourselves being when we were kids:

astronauts, doctors, artists and teachers (coder, too — this is 2013, after all). We started with "Writer," something we hope to be one day. Clicking on the dream brings you to a page full of apps clustered around the given topic. At the top of the page is a well-known representative of said career path — for Writer, you get William Shakespeare, a fellow who certainly knew his way around a quill. Clicking on that image will bring you to a Wikipedia entry for old Billy S. Meanwhile, tapping Shakespeare's name allows you to swap him out for another selection.

Below the hero are a number of pre-selected apps divided by skill level. OLPC says it opted for this method since age



categories don't really take into account the different rates at which children develop. In the case of the Writer category, the Beginner section includes links to picture books, while the Intermediate level has four apps including a journal and Wiktionary. Finally, Advanced has Wattpad, a community for amateur writers. While all of the content is targeted at kids, parents are probably going to want to give everything a look-see before handing it off, particularly when it comes to things like e-books, which will require your password to download (you don't want your child freely downloading titles on your credit card, after all). Also, this is a small nitpick, but we were slightly irritated by the fact that hitting the back button in a given app will dump you on the main menu, rather than your most recently selected dream.

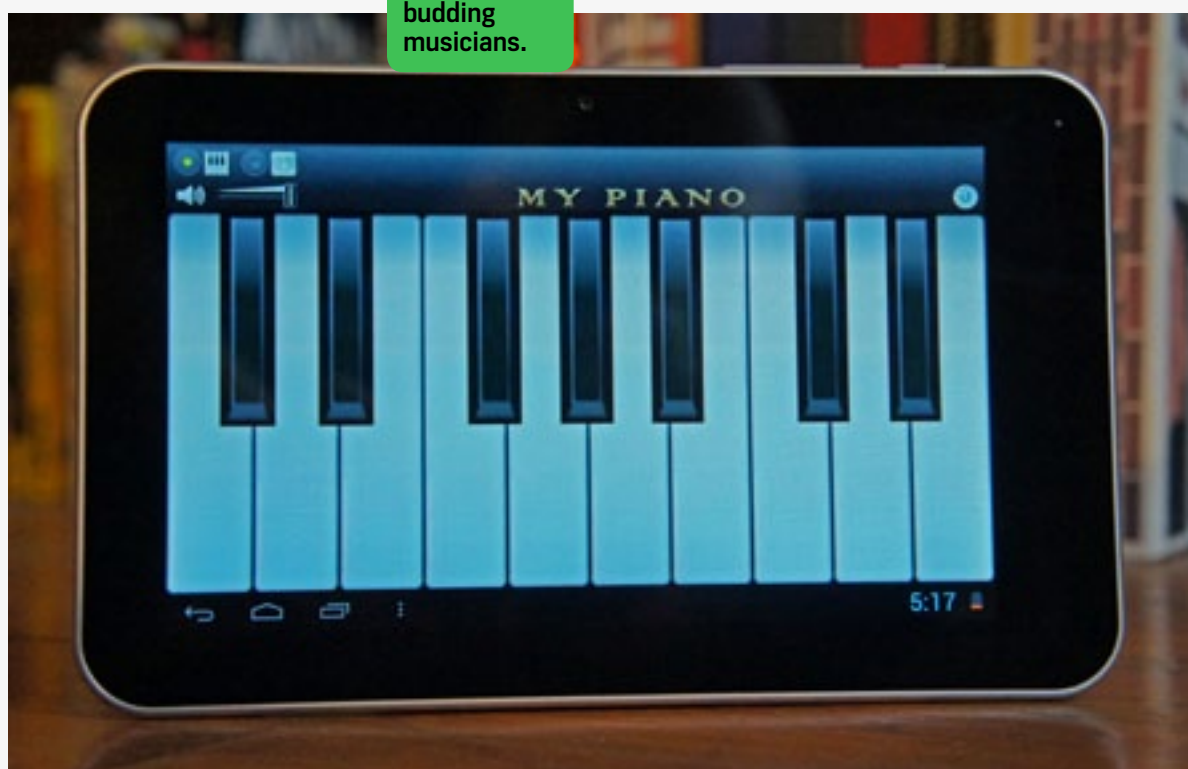
All in all, there's a fairly wide selection of apps here, around 150 (including both English and Spanish offerings), thanks to content partners like Discovery and Oxford University Press. The common thread is free educational apps targeted at engaging a child's young mind, a noble goal for this manner of device and one that does unquestionably add to its value. Clicking the apps icon in the

upper-right-hand corner of the Dreams page brings you to a more familiar layout featuring all of the available apps. In the upper-left-hand corner of Dreams, meanwhile, is an icon for a menu that gives you access to your collection of books, music and video. You can also toggle between Spanish and English (each of which have their own selection of apps and all of which appear when you go to the full app menu), browse the internet and adjust parental settings for all of the kids' accounts on the device.

In parental settings (also a standard feature in the latest version of Android), you'll be able to turn Google Talk and internet access on and off and block access to individual apps. (You can also choose to enable the tablet only for use with the pre-selected apps.) Additionally, the menu gives you a shortcut to the vanilla Android interface, where you

can use the XO as a standard tablet. And if you'd

Practice makes perfect for budding musicians.





like to see how your child is progressing, clicking his or her profile in the Dreams menu gives you access to a page letting you know just how far they've advanced in the various career goals (73 percent writer here). You can't, however, import apps directly from the vanilla Android ecosystem to the Dreams interface, as OLPC only allows ones it's approved directly. That also means, of course, that access to Google Play is limited to the stock Android side of things.

The XO's skin offers an innovative and easy-to-use interface that should get kids up and running quickly (though the hardware itself doesn't exactly load all of the apps instantly). OLPC's also done a pretty good job putting access in the hands of parents. As for the apps themselves: they're pretty hit or miss. Even as grown-ups, we enjoy playing around with Animating Touch and My Piano. Others, like Logodroid, are simply baffling.

## WRAP-UP

The XO Tablet isn't set to win any hardware awards — but then, no one really expected top-of-the-line design or performance from a kids' tablet. On the software side, things are more compelling. OLPC has created a unique approach to helping broaden kids' knowledge and encourage curiosity — goals we can easily get behind. But while the company has some solid app partners, the selection here is a bit uneven (though it does, ultimately, add value to Vivitar's rebadged hardware). Most importantly, perhaps, the price feels steep for a children's toy. And that's a bummer for a company with such a great cause. **D**

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*Brian's work has appeared in Spin, The Onion, Entertainment Weekly, The New York Press, PCMag, Laptop, and various other publications.*

## BOTTOMLINE

### OLPC XO TABLET \$149



#### PROS

- Attractive Yves Béhar-designed case
- Rugged design well-suited to kids
- Around 150 apps included
- Access to Google Play for downloading more apps

#### CONS

- Expensive for a kids' device
- Uneven app selection

#### BOTTOMLINE

One Laptop Per Child's first commercial product comes loaded with software, but the quality of the apps is uneven and the price is high for what's essentially a kids' toy.



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# REVIEW

## MOTOROLA DROID ULTRA



Will Motorola's  
**Droid Ultra** be able to  
win over would-be  
Moto X buyers on  
the merits of a big  
screen alone?  
**By Brad Molen**

**A**fter roughly nine months of almost complete radio silence, Google-owned Motorola suddenly sprang into action by announcing four devices in the space of eight days. The lineup of new smartphones included the much-hyped Moto X and a fresh crop of Droid-branded handsets for Verizon. Interestingly enough, this quadruplet shares many of the same specs; aside from exterior design, screen and battery size, there's very little to distinguish Motorola's latest offerings. The first out of the gate is the Droid Ultra, a 5-inch, 720p model wrapped in Kevlar.





All told, it's more of a mid-range phone, though its on-contract price of \$200 would suggest otherwise.

The Droid Ultra is arguably the closest cousin to the Moto X, and because the two have basically the same specs and price, we've been scratching our heads trying to figure out why they both exist. Still, we did our due diligence in giving the Ultra the full review treatment. How does it differentiate from Moto's flagship, and does it hold any sort of advantage? Is the device worth paying \$200 and agreeing to a two-year contract? Read on as we answer these questions and more.

## HARDWARE

For all the commonalities between the Droid Ultra and Moto X (which we'll discuss at length in this review), its external design at least creates the illusion that they're completely different phones. While the X features slender curves, the Ultra reminds us of the 2-year-old Droid RAZR, with a hump for the camera module up top (don't worry, it's less pronounced this time). It also features the same tapered body, with a chassis that gets thinner toward the bottom of the phone, along with

slightly tapered corners to match. Also similar: those straight edges and short, steep curves, which come together to ensure a natural fit in the hand. At the same time, it gives you a nice place to rest your fingers. With a 137.5 x 71.2mm frame, the Ultra stands 8mm taller and 6mm wider than the Moto X. And though it's 7.2mm thick at its thinnest point, it's only a little bit skinnier at its thickest point than its close cousin. The Ultra weighs 4.83 ounces, which is heavier than the X, but still lighter than previous-generation devices. Besides, its weight is still perfectly reasonable. In general, the X is technically easier to hold, but you won't feel like the Ultra is burdensome to carry around.

Just like the Droid RAZR series that came before it, the Ultra is built with a layer of woven DuPont Kevlar fiber that Motorola reps tell us is locked into place by a resin. This layer, which is the honeycomb

The volume rocker doubles as a SIM card tray on the Ultra.



pattern you see underneath the plastic casing, is meant to minimize thickness and add a small amount of additional durability (though we doubt firearms are powerless against it, so we'd discourage you from testing them out). Regardless, we're still tremendously disappointed by how much grime and grease the glossy back collects; it makes the phone look maddeningly dirty, and you'll want to invest in a nice micro-fiber cloth so you can wipe the device off on a regular basis. There also seems to be a small pocket of air between the plastic and the layer beneath, as the back of the phone has a little bit of give, especially closer to the top. Interestingly, the Droid Maxx also uses Kevlar,

but opts for a soft-touch cover instead of plastic, which provides a cleaner look and better grip. Suffice to say, we would've much preferred to see Motorola do the same with the Ultra.

Just like Moto's three other new handsets, the Ultra features a 720p screen. This particular smartphone uses a 5-inch AMOLED panel, which means you'll see darker darks and more saturated colors, while theoretically saving battery life — an important thing when you regularly use a service like Active Notifications. We could see the display from nearly any viewing angle, but we had a difficult time making it

out in sunlight, even with the brightness bumped all

The Ultra is wrapped in glossy Kevlar, which tends to get dirty.





the way up. In normal conditions, however, we were quite happy with how the display looked; despite it not being 1080p like many of its \$200 competitors, the Ultra's resolution should be satisfactory for most buyers.

The Ultra offers capacitive navigation keys below the display, which is a contrast to the X's virtual keys; you get a lot more screen real estate as a result, but this may come as a disappointment to some who like to keep the hardware as minimal as possible. Above the screen, you'll find an earpiece, sensors and a 2-megapixel front-facing camera. A flip of the phone reveals a rectangular camera setup, with the LED flash and lens joined by a hidden speaker grille; you'll also see a trio of logos on the back consisting of Verizon, Motorola and Droid brands from bottom to top, with Moto's version being backed by a textured plastic material. The top of the phone has nothing but a 3.5mm headphone jack, while the bottom has a micro-USB port that also can be used for USB OTG, which means you can connect flash drives, USB keyboards and even a mouse to your device.

We were especially impressed by one particular aspect of the phone's design. The volume rocker, found on the right side of the Ultra, doubles as a SIM card tray. This is a clever way to save space, and it doesn't make the phone feel any cheaper since the power button, which sits just above it, appears to be fashioned out of the same mold.

SPECIFICATIONS	MOTOROLA DROID ULTRA
DIMENSIONS	137.5 X 71.2 X 7.18MM (5.41 X 2.80 X 0.28 INCHES)
WEIGHT	4.83 OZ (137G)
SCREEN SIZE	5.0 INCHES
SCREEN RESOLUTION	1,280 X 720 (294 PPI)
SCREEN TYPE	AMOLED
BATTERY	2,130MAH LI-POLYMER (NON-REMOVABLE)
INTERNAL STORAGE	16GB (11GB ACCESSIBLE)
EXTERNAL STORAGE	NONE
REAR CAMERA	10MP CLEARPIXEL, AF, LED, F/2.4
FRONT-FACING CAM	2.0MP
VIDEO CAPTURE	1080P / 30 FPS
NFC	YES
SIM	NANO
RADIOS	VERIZON WIRELESS: LTE (700 / AWS), HSPA+ 42 MBPS (850 / 900 / 1900 / 2100), CDMA / EVDO (800 / 1900), QUAD-BAND GSM / EDGE
BLUETOOTH	V4.0 LE+EDR
SOC	MOTOROLA X8
CPU	1.7GHZ DUAL-CORE SNAPDRAGON S4 PRO
GPU	QUAD-CORE ADRENO 320 AT 400MHZ
RAM	2GB
ENTERTAINMENT	FM RADIO, MIRACAST, USB OTG
WIFI	DUAL-BAND, 802.11A/AC/B/G/N
OPERATING SYSTEM	ANDROID 4.2.2 (MOTO UI)



(Admittedly, however, we wonder how well the removable rocker will hold up over time, so perhaps there's a reason other OEMs haven't attempted this feat before.) Motorola decided to transition from micro-SIM cards to nano-SIM — just like Apple did with the iPhone 5 and LG will do with the G2 — and we have a feeling other manufacturers will follow suit in the next year or so. In the meantime, this will make things especially difficult for anyone who has multiple devices and likes to swap their SIMs back and forth, but this will likely affect only a small minority of users (which includes us).

Since the Ultra is a Verizon LTE device, its radio supports bands 4 and 13 (700 / AWS) along with the usual CDMA / EVDO frequencies. Fortunately, it also features GSM tech for global roaming, such as quad-band HSPA+ (850 / 900 / 1900 / 2100) and quad-band GSM / EDGE. You'll also get Bluetooth 4.0 LE+EDR, NFC, Miracast compatibility, WiFi Direct, plenty of GPS / GLONASS support and 802.11a/ac/b/g/n. It doesn't offer wireless charging support, so you'd want to lean toward the Droid Maxx if it's part of your daily routine.

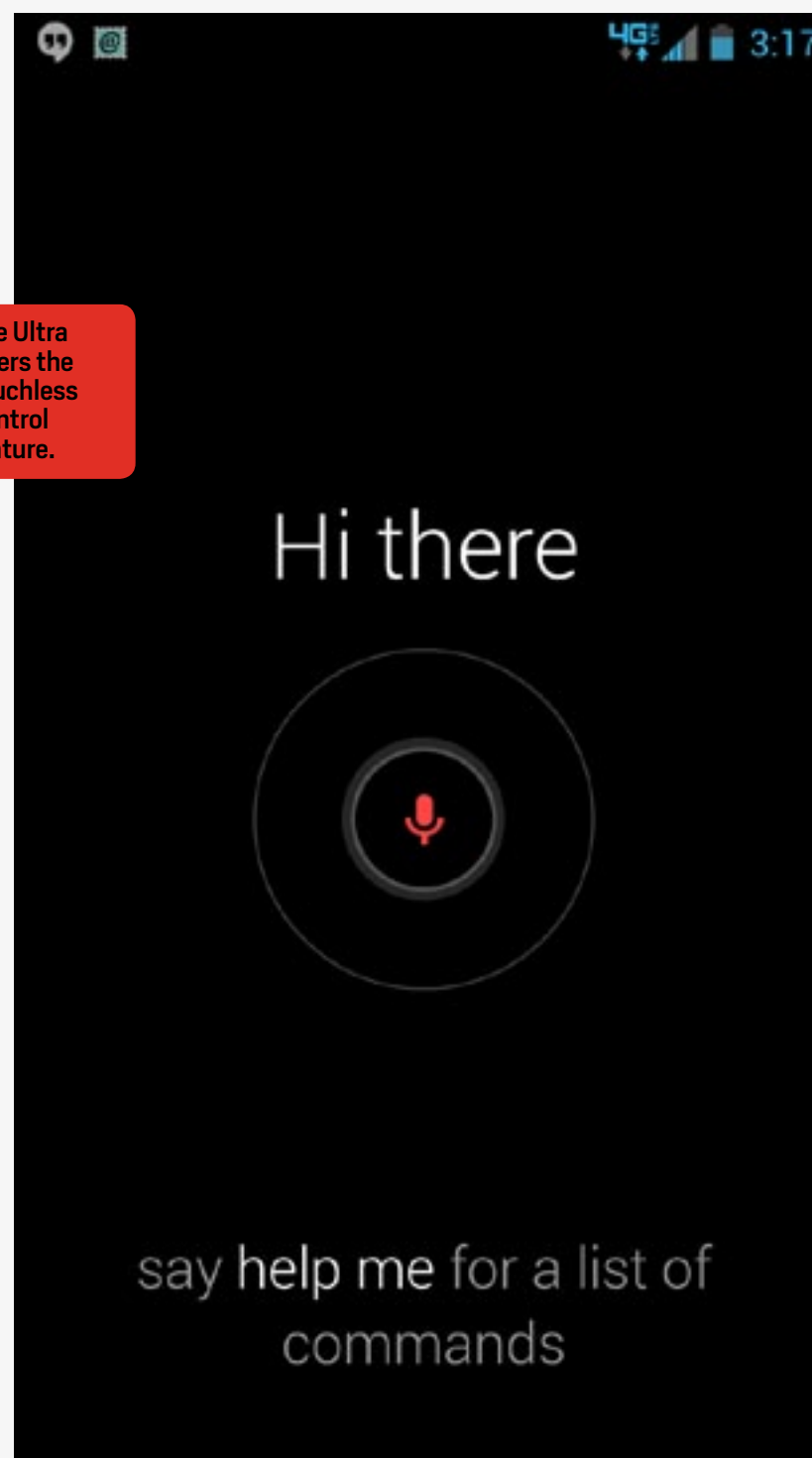
## SOFTWARE

Whether you get the Droid Ultra or the Moto X, you'll be treated to basically the same user experience. Both devices ship with Android 4.2.2 out of the box, and even though it's not a completely vanilla version of the OS, the customizations are kept to a minimum compared to OEM

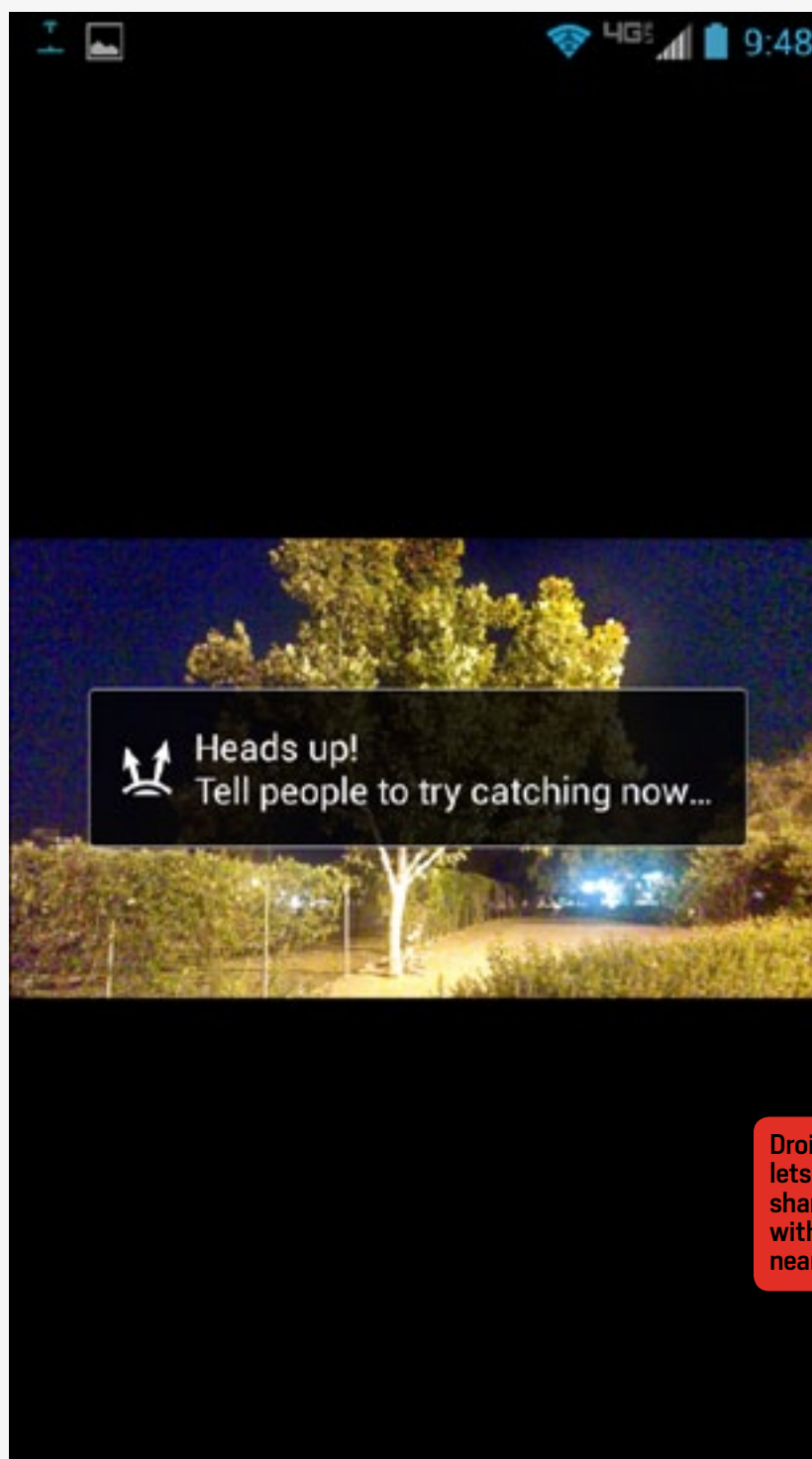
skins like TouchWiz and Sense. There are a few extra widgets and services provided by Moto, but everything else is pretty close to what you'd find on a Nexus; hopefully this means it'll get the update to 4.3 sooner rather than later, but it first needs to clear Verizon's rigorous testing process, so we're not holding our breath that it'll be coming right away.

The Ultra, just like other Droid-branded devices, is filled to the brim with pre-loaded software, including a few Amazon

The Ultra offers the Touchless Control feature.







apps, Audible, NFL Mobile, IMDb, Mobile Hotspot, My Verizon Mobile, Verizon Tones, Viewdini and some other VZW applications. Most of them can't be uninstalled, but at least you can disable them so they're not getting in the way.

All of the same Moto-branded services that were introduced on the Moto X are present on the Droid Ultra too. Active Notifications pulses new alerts to your screen when it's in standby mode, letting you bypass the lock screen entirely and go straight

to that particular notification. Touchless Control is the phone's always-listening mode, so you just need to say, "OK Google Now," (after you train the phone, of course) and the voice assistant pops up. Assist can speak your texts out loud while you're driving, change settings when you're in a meeting or set up a Do Not Disturb mode at night. And Migrate can transfer your contacts, texts, media and call history from another Android device.

Droid Zap, however, is included with all three Verizon Droids, but isn't offered on the X. It's a photo-sharing feature that lets you "push" non-compressed images to anyone less than 1,000 feet away. When you're viewing a picture in the gallery, just swipe up with two fingers and the phone starts looking for potential recipients. Even if you don't have one of the latest Droids, however, not all is lost: you just need to download the free Droid Zap app in the Play Store and you'll be able to join the fun. But therein lies the problem: not everyone will have downloaded the app, and even fewer people will be interested enough to go through the hassle. Meanwhile, there are several other ways to share media with friends and family, so we simply don't see much reason to go through Droid Zap instead of the standard sharing menu.

## CAMERA

UltraPixel. PureView. Time Shift. Eraser. The list goes on. It seems like every





ClearPixel  
tech helps  
to capture  
more colorful  
shots.

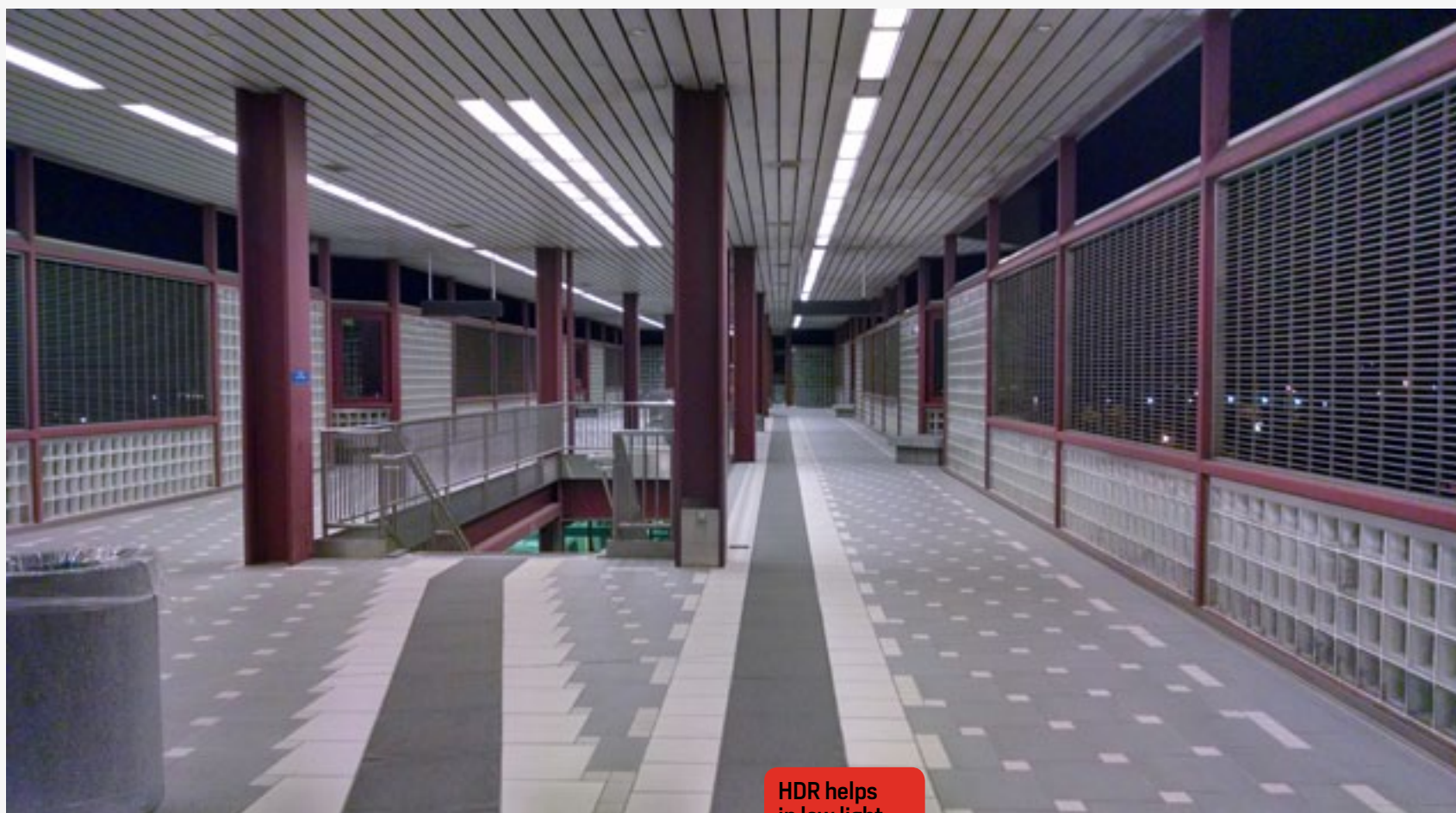
manufacturer is coming out with its own clever take on imaging to get a leg up over the competition, and Motorola is no exception. Its contribution to the craze is ClearPixel, which claims to collect more light and take faster, better pictures. What is Motorola's trick? Many of the cameras we use in smartphones today detect light with red, green and blue pixels. Since each of these pixels only sees one color, cameras typically miss a huge portion of visible light; Moto, on the other hand, throws in a panchromatic pixel capable of detecting the full spectrum. Thanks to this, along with the f/2.4 aperture and a  $1.4\mu$  pixel size, we should be able to get much better low-light shots. Because of this, however, the RGBC sensor (as Motorola calls it) takes a little more time to snap shots, which means

it's not the best option for capturing moving objects in poor lighting conditions.

As the Droid trio and the X all have the same camera specs, we're confident that all four use the OmniVision OV10820 sensor as well. You'll have a 10.5-megapixel camera with autofocus at your disposal, but the user experience is designed with as much minimalism as one person can handle; just like on the X, you can swipe from the left to get settings and swipe from the right to bring up your gallery. ISO, white balance, exposure adjustments and scene modes are a thing of the past, it seems; you're allowed to tweak HDR, use panorama, add tap-to-focus, enable geo-tagging and change the flash, but that's about all you can do. For better or worse, you just have to take a step back







and let Moto do all of the heavy lifting.

Quick capture is also offered on the Ultra, and it works just as well as it did on the X: you can twist your wrists twice in a row to activate the camera UI, which comes in handy when the phone is asleep. As for the camera's performance, our assessment hasn't changed since we published our Moto X review. HDR shots worked well when we needed to combine shadows and highlights in the same image; all other shots were hit and miss. We were able to get great color reproduction and an above-average amount of detail in most daytime shots, but there were quite a few instances when the entire image appeared washed out. Low-light images were also a mixed bag. True to the company's claims, the camera is indeed good at capturing errant light; unfortu-

HDR helps in low light, but resulting shots are inconsistent.

nately, noise and blurring frequently creep in since the camera occasionally approaches ISO 6500, and it captures color and white balance inconsistently. Also, the Ultra lacks image stabilization, which doesn't help either.

Our video footage was taken at a resolution of 1080p (1,920 x 1,080) and resulted in a bit rate of 17 Mbps and a frame rate of 30 fps. Movies actually appeared better than most smartphones at this resolution, with good color and smooth motion. We only had some concerns about the mics, which picked up a little more wind than we would have preferred.

## PERFORMANCE AND BATTERY LIFE

Assuming Motorola and Verizon are targeting the average mid-range handset market, the Droid Ultra's X8 archi-



texture should be more than sufficient. For those of you who haven't read our review of the Moto X, here's what you need to know about the X8. It's comprised of a 1.7GHz dual-core Snapdragon S4 Pro, a quad-core Adreno 320 GPU clocked at 400MHz, a core for contextual computing and another for natural-language processing. The latter two cores are meant to handle features like Touchless Control and Active Notifications without requiring a huge hit on battery life. Lastly, it also gets 2GB of RAM as part of the bundle.

Basically, then, this setup is ideal for anybody who isn't a power user and doesn't need the absolute best graphics processor available on a smartphone today. In using the phone over the course of a week, everything was immensely responsive and not once did we have to worry about the phone crashing or

slowing down. We played games for several hours, and while it didn't have quite the level of detail that you'd find on an Adreno 330, we doubt most people will even notice or care about the subtle difference. Our benchmark table compares the Ultra with the Moto X and Nexus 4, both of which have Snapdragon S4 Pro chips (though the latter uses a quad-core version).

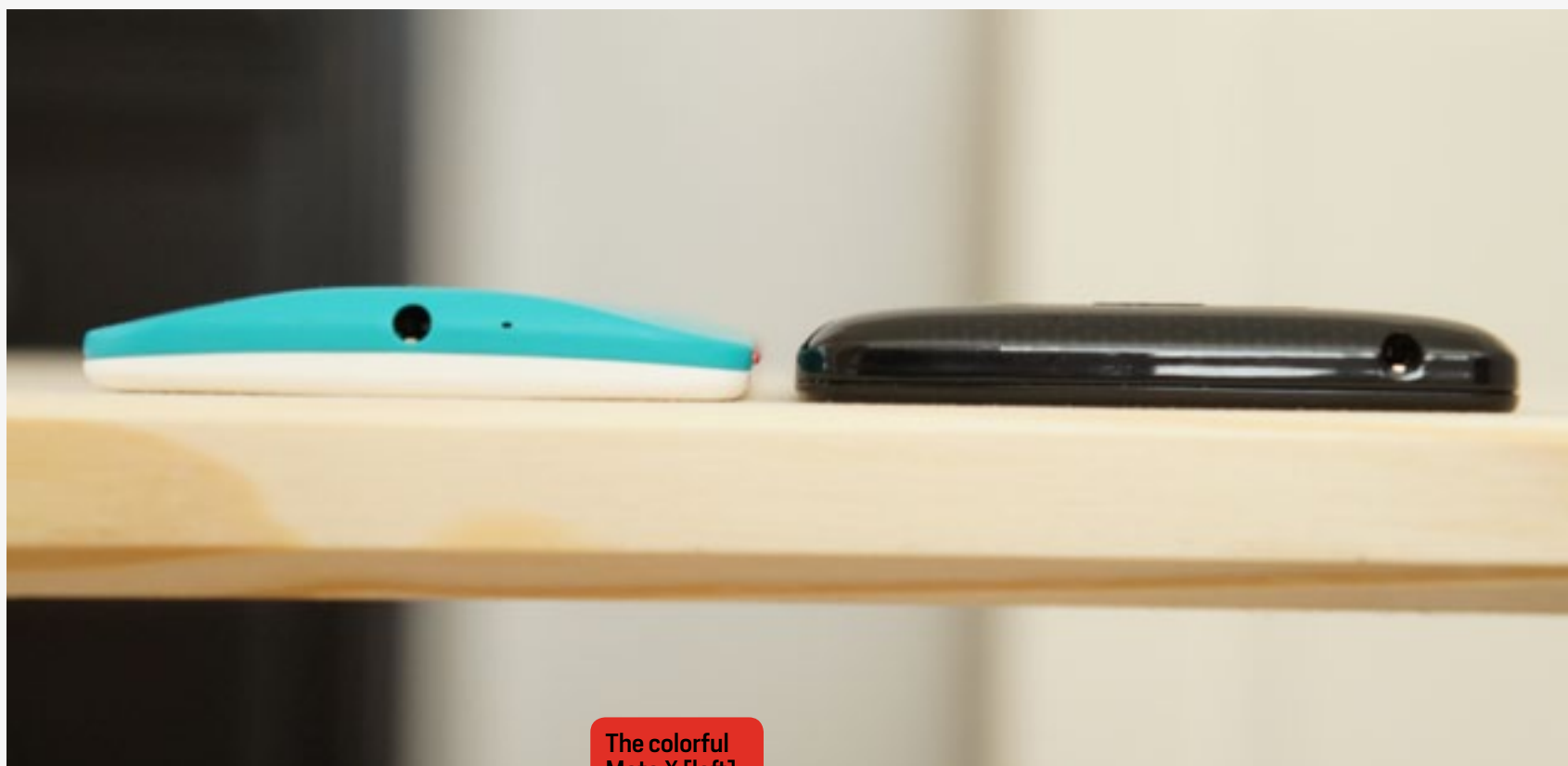
As a disclaimer, we decided to show most of the Nexus 4 test results as they appeared on Android 4.2.2 — the same version of the OS running on Motorola's selections. (3DMark was the only exception, as we didn't have the chance to run it on 4.2.2.) Granted, some of the scores generated using 4.3 are a little better — 660ms in SunSpider 1.0 and 15 in GL-Bench 2.7, for instance. Our Quadrant score, meanwhile, improved to 5,224. Overall, though, it's clear that Moto's X8

BENCHMARK	DROID ULTRA	MOTO X	NEXUS 4
QUADRANT 2.0	8,767	8,958	4,949
VELLAMO 2.0	2,465	2,427	1,382
3DMARK ICE STORM/ICE STORM EXTREME	11,495 / 7,025	11,620 / 7,114	10,077 / 4,391
SUNSPIDER 1.0 (MS)	594	582	1,016
GLBENCHMARK T-REX 2.7 HD OFFSCREEN (FPS)	15	16	13
CF-BENCH	14,540	14,092	13,954

SUNSPIDER: LOWER SCORES ARE BETTER. NEXUS 4 TESTS WERE RUN ON 4.2.2 FOR CONSISTENCY (3DMARK EXCEPTED, WHICH WAS RUN ON 4.3).







The colorful Moto X [left] alongside its sibling, the Droid Ultra.

alternative benefited from a few solid optimizations.

What's more, you're not going to see any noticeable difference in performance between the Ultra and the X.

Motorola's onto something when it comes to battery life. We raved about the Moto X, which lives up to its claim of 24-hour runtime (assuming mixed usage). We weren't able to replicate Moto's promise of 28-hour battery life for the Droid Ultra, but it still did a good job holding a charge. The Ultra still frequently made it through a full day of use, while a heavier workload yielded us around 13 hours of total life. (For those asking, our heavy workload consisted of taking pictures and videos, navigating from San Francisco to the South Bay, a few hours of using the phone as a mobile hotspot, surfing the web, frequent emailing and a good deal of social networking.) If this is what we

have to look forward to from Motorola, we can't wait to try out the Droid Maxx's larger battery.

Speaking of navigating, the GPS had no problem following us around town. Calls on Verizon's network were clear, and the audio was incredibly loud both in the earpiece and on speakerphone; in fact, the same goes for media playback, regardless of whether we used the speakers or a pair of headphones. Touchless Control also recognized our commands in every environment, whether in a quiet house or on noisy streets.

## THE COMPETITION

Here's the thing: most of our review up to this point feels moot. We still have a hard time understanding why the Ultra needs to exist: it's offered at the same \$200 on-contract price as the similarly specced Moto X, which will also be available on Verizon. We won't dispute



that it has a larger screen size, and a different design that may indeed appeal to different people. However, the Ultra not only uses nearly identical specs and software as the X, but it also offers the same screen size as the Droid Maxx. The Maxx and the Droid Mini both make sense, because having different screen sizes, batteries and price points (\$300 and \$100, respectively) at least ensure a greater number of options.

The Ultra will only appeal to those people who are okay paying \$200 for a mid-range device that has a slightly larger display than the Moto X, and don't have a problem with having less storage space and a smaller battery than on the Maxx (not to men-

tion the lack of wireless charging). It just seems odd that Verizon would be willing to devote a good portion of its Droid marketing efforts to such a device that doesn't even seem necessary.

Of course, we're saying this with the assumption that paying \$200 for a mid-range phone is an acceptable option for you, but we have a feeling that not many people would choose the Ultra over the Samsung Galaxy S 4, which is available for the same price. The GS4 sports a 5-inch (1080p) AMOLED screen, quad-core Snapdragon 600 processor, a much better camera, infrared, expandable external storage and the list goes on. Overall, the Ultra is a good phone and we like the Touchless Control and Active Notifi-

With similar specs, the Ultra just has screen size over the X.






cations as much as the next person, but we have a hard time recommending the Ultra when it's the same price.

Oddly enough, our overall enjoyment of the two latest Motorola devices makes us very eager to try out the Droid Mini. With very few exceptions, it has the same features and similar specs, with a smaller display size and an appropriate \$100 on-contract cost, which actually *works* for a mid-range smartphone. HTC and Samsung have attempted to make petite versions of their flagship devices, only to cut a lot of corners in the process; from what we can tell so far, the Droid Mini appears to be the closest to its older (and larger) brethren.

## WRAP-UP

The Motorola Droid Ultra is a great mid-range phone with lots of compelling features that many potential buyers will find interesting. It does have its negatives,

though — this is essentially a Moto X riddled with Verizon branding, a glossy and fingerprint-prone finish and a non-sensical price. But therein lies the problem: we simply can't think of a reason why the Ultra should co-exist with the X at the exact same price. The only way we'd recommend it over the X is if you need a (slightly) larger screen or perhaps just prefer a slightly thinner and taller chassis, but even the Maxx offers those things and adds a much larger battery. Of the four handsets released by Motorola this month, this one is by far the most uninteresting and, more importantly, the least likely to tempt potential buyers. It's ironic, perhaps, that such a fate would befall a phone called the Ultra. 

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*Brad is a mobile editor at Engadget, an outdoorsy guy, and a lover of eccentric New Wave and electro. Singer and beatboxer.*

## BOTTOMLINE

### MOTOROLA DROID ULTRA

**\$199**  
(ON CONTRACT)



#### PROS

- Solid performance for a mid-range phone
- Great firmware and useful features
- Impressive battery life

#### CONS

- Priced too high
- Fingerprint magnet
- Feels redundant on Verizon's lineup

#### BOTTOMLINE

The Motorola Droid Ultra is a good phone, but it's a mid-range device that's priced too high and doesn't offer any benefits that you won't already find on the Moto X.



# The Once-Bright Future of Color E-Paper



The Hanvon C-18 Mirasol e-reader, which was released for the Chinese market in 2012.

By Sean Buckley

**It's all too easy to dismiss** the optimistic fantasies of yesterday: flying cars and robot servants may have filled the pages of *Popular Mechanics* in the 1950s, but today we're better grounded in reality, pinning our hopes on



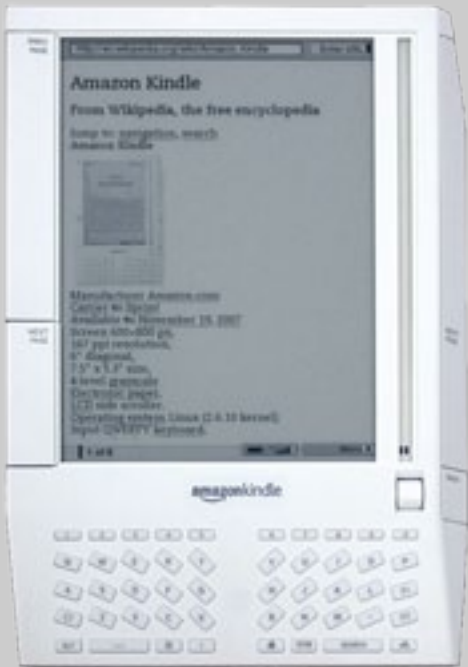


more reasonable futures based on technology we've actually developed. Still, even those predictions fall flat sometimes, and it can burn to look back at the track record of a horse we once bet on. For this editor, that stallion was known as color e-paper, a series of dimly hued electronic-paper technologies that teased a future of low-power gadgets with beautiful, sunlight-readable matte displays. Prototypes from half a dozen firms exhibited tantalizing potential for the last half of the 2000s, and then promptly vanished as the decade came to a close. Like many ill-conceived futurist predictions, expectations for this technology gently faded from the consumer hive mind.

The legacy of color e-paper may be muted and dim, but its past, at least, is black-and-white: monochrome E Ink set the tone for a decade of reflective, low-power displays. Years before the iPad and other tablets created the so-called third device, sunlight-readable E Ink screens nested into the public consciousness with Amazon's inaugural Kindle. Launched in 2007, it was a blocky, expensive and awkward device that had more potential than practical application, but the visibility of the Amazon brand lifted its stature. Consumers paid attention and the e-reader category was forged.

Naturally, it didn't take long for consumers to want more — sure, a sunlight-readable display that lasted for days on a single charge was great, but what about color? This, too, was in the works for a few years, but progress was slow. Early prototypes from Fujitsu did a decent job of mirroring their monochrome cousins' modest power consumption, but images often appeared washed out and faded, like a newspaper left in the sun too long. The technology failed to beat the next Kindle to market, but improved as the years went on. In the meantime, Barnes & Noble added a splash of color to the e-reader market by attaching a secondary, peripheral LCD display to its Nook e-reader — providing a vibrant and active navigation hub under its reading surface.

The race to create a consumer-ready color e-paper



Amazon's first e-reader, the Kindle, was so popular that it sold out in a matter of hours.



display heated up as Barnes & Noble, Sony and Amazon fought over market share — if electronic reading devices were to be the next big thing, then surely color would be the category's killer feature. Companies like Samsung, Bridgestone, E Ink (then known as PVI), Fujitsu, Qualcomm, Philips and Plastic Logic spent the better parts of 2009 and 2010 teasing us with brighter screens, faster refresh rates and flexible-display technology.


## The legacy of color e-paper may be muted and dim, but its past, at least, is black-and-white: monochrome E Ink set the tone for a decade of reflective, low-power displays.

Despite the excitement surrounding color e-paper, however, few firms were actually ready to put their cards on the table. In early 2010, Amazon CEO Jeff Bezos dispelled rumors of an incoming Kindle Color, saying that current prototypes were simply “not ready for prime-time production,” based on what he'd seen in the company's labs. Sony also dodged the subject, committing itself to its existing line of monochrome e-readers until higher-quality panels were available. Even the companies behind the technology openly admitted that it wasn't ready — PVI and Qualcomm both delayed their respective E Ink Triton and Mirasol color displays, independently describing them as unsatisfactory. Worse still was the high cost of color e-paper development, which drove Samsung to back out of the industry in 2010.

Unfortunately, the delays didn't stave off consumer demand for a color reading device, and it came to market through the path of least resistance: the LCD. This veteran technology may not have been able to compete with color e-paper in the arenas of power consumption or visibility in direct sunlight, but it made up for these faults with bright, accurate color reproduction and the ability to play back video content. More importantly, the technology was







The original Nook had a 6-inch e-paper display, with a color touchscreen at the bottom.

*available*, and the growing tablet market soon offered a ready alternative to the developing color e-paper technology. Companies betting on color e-paper were soon forced to re-evaluate their strategies, Qualcomm told Engadget back at SID 2011, citing Apple's inaugural tablet as the catalyst for its partners' reconsideration.

The original iPad didn't kill the color e-reader independently, of course — the device was simply too large and too expensive to scratch the itch for every digital-reading enthusiast with an eye for color. Barnes & Noble's first full-color e-reader didn't have these problems. Launched in late 2010 for \$250, the 7-inch Nook Color was the right device at the right time, introducing an affordable color reading device while simultaneously giving the bookseller an edge in the growing e-reader market. It didn't take long for Amazon to react to the positive consumer response, launching its own LCD color e-reader, the Kindle Fire, for a scant \$200 the following year. The color e-paper offerings of the same era just couldn't compete — Kyobo's \$310 Mirasol eReader was panned for having poor battery life and unstable software, and an E Ink Triton device by Hanvon priced itself out of the market with a staggering \$530 sticker. What's worse, consumers didn't even seem





The Koobe Jin Yong e-reader with Qualcomm's Mirasol display technology.

to know these products existed. The damage was done; the category's biggest brands knew they could create a successful color e-reader without next-generation e-paper. By the time ASUS and Google trumped the Kindle Fire with the Nexus 7, the technology was all but forgotten.

## The damage was done; the category's biggest brands knew they could create a successful color e-reader without next-generation e-paper.

Color e-paper may have faded from the public consciousness after media tablets usurped its role in the consumer electronics space, but the technology itself lives on, albeit dimly. PVI, a company so dedicated to reflective-display technology that it changed its name to E Ink Holdings Incorporated, refocused its efforts on new markets, creating programmable supermarket price tags and digital billboards for European firms. It's even limping along in the color e-reader space, although we wouldn't call it a major player — the most recent device to sport the company's Triton color E Ink





Ectaco's pricey jetBook Color 2 with a Triton 2 color E Ink screen.

display, the Jetbook, sells for an astounding \$500. Hardly priced to sell, but the company tells us that it has seen some success in European classrooms. Despite these efforts, the company isn't exactly shining: in its Q2 2013 financial report, E Ink posted a \$33.6 million loss — its biggest in four years. Citing numbers from IHS, the report optimistically looked to Western European purchasing trends to cushion the blow, but more telling are the losses suffered in North America, which is now exhibiting a 15 percent loss in worldwide e-reader shipments when compared to 2011. The devices just aren't selling as fast as they used to.

Other companies are sending mixed messages. Qualcomm's Mirasol technology shipped in precious few devices before the company put a lid on production last summer, yet it continues to demonstrate new and intriguing prototypes. At SID 2013, for instance, the company trotted out a smartphone with a reflective 5.1-inch, 2,560 x 1,440 display and a 1.5-inch smartwatch, teasing a future of color e-paper-equipped hardware. Even so, the company was quick to point out that these devices are mere mock-ups, and while the 1.5-inch screen is slated for use in unannounced third-party devices, the smartphone display still needs years of R&D before it's market-ready. When we asked the company if it was still developing screens for color digital readers, Qualcomm representatives could only tell us that they





had nothing new to announce. Clearly the company's Mirasol technology is still moving forward, but the firm seems focused on smaller devices. Amazon's recent Liquavista acquisition raises even more questions: if the iPad, Kindle Fire and Nook Color sealed the fate of color e-paper years ago, why did one of the industry's biggest e-reader manufacturers purchase a company known for low-power color displays? Reaching out directly for an answer proved futile for Engadget — the company won't budge on the future of color e-paper or Amazon's intentions for the next-generation Kindle device.

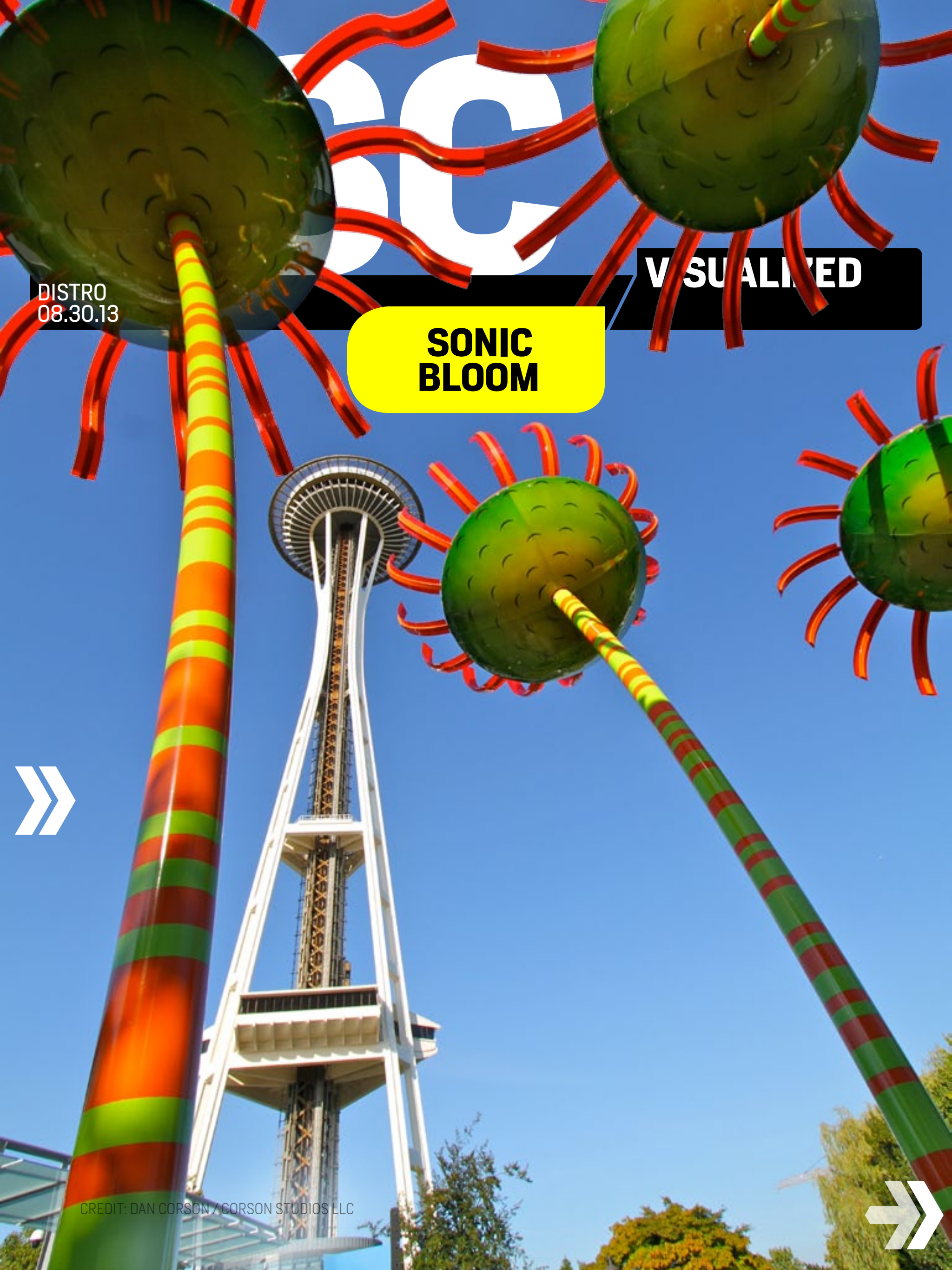
Hushed acquisitions and quiet color-display advancements aren't enough to save color e-paper, however. More daunting than the display category's technological hurdles are the commercial roadblocks in its path: consumers are simply losing interest in the e-reader category as a whole. That certainly isn't to say that it's a dead or dying market, but it's slowly trending toward the niche. According to an IDC forecast released in March, e-reader shipments fell by a staggering 31 percent in a single year — peaking at 26.4 million in 2011 and dropping to 18.2 million in 2012. At the same time, tablet sales have increased by about 11 percent, with about half of all devices sold falling into an e-reader-competitive form factor, measuring eight inches or smaller. Worse still, these numbers are for traditional *monochrome* e-readers, not the hopeful color models that failed to take flight.

The Kindle brand and its sunlight-readable e-paper display probably aren't going anywhere, but the category is edging away from the mainstream. Users demand more out of their devices these days, and slow-refreshing E Ink just can't cut it for a media tablet. If our predictions for the future need to be grounded in reality, then maybe it's time we finally put our color e-reader dreams to bed. The technology may eventually find a home somewhere, but at this rate, it likely won't be on our nightstand. **D**

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*Sean's a lifelong gamer, a comic-book nerd, and an Eagle Boy Scout. He also writes for Engadget. What else is there to know?*





SC

DISTRO  
08.30.13

VISUALIZED

**SONIC  
BLOOM**



CREDIT: DAN CORSON / CORSON STUDIOS LLC





DISTRO  
08.30.13

VISUALIZED

## SONIC BLOOM

Seattle's long been a hotbed of eco-forward adoption, but it seems that some people have yet to opt-in for renewable power on their utility bills. That's where Seattle City Light's Green Up program comes in, promoting solar energy with art installations throughout the city. The program tapped sculptor (and plant geek) Dan Corson to adorn the grounds of the Pacific Science Center and the result is entitled: Sonic Bloom. These 40-foot tall steel and fiberglass *sun flowers* have custom photovoltaic cells to soak up the sun's rays and transform them into an evening LED light show. Not only that, but the flowers also serve up soothing sounds as their sensors pick up the motion of passersby.



CREDIT: DAN CORSON / CORSON STUDIOS LLC



DISTRO  
08.30.13

ESC

Q&A

# PAUL O'BRIEN

The **MODACO**  
founder on carrier  
lockdowns and  
brand name clarity







Motorola's  
classic 2004  
flip phone,  
the RAZR V3.

**What gadget do you depend on most?**

While I'm tempted to say my phone (an HTC Butterfly S right now), in reality, it's my iMac. Much as I love my phone and sort of like my tablets, I just can't be really productive unless I'm in front of a "real keyboard." My QWERTY time is split between the iMac, a MacBook Pro and a Chromebook 550 (what an underrated piece of kit!), but most of the time is with the big screen.

**Which do you look back upon most fondly?**

Definitely the original Windows Smartphone — the Orange SPV, aka the HTC Canary. While today's devices might appear to have more in common with Pocket PCs, it's the keypad-toting Windows devices that really kick-started the smartphone revolution. Sure, lots of things about the device sucked — in fact it was the frustrating certificate lockdown that Orange enforced on the SPV that originally made me start MoDaCo — but in those days, products like that really blew your mind. I just don't think you get that same feeling now when something new comes out.

**Which company does the most to push the industry?**

The fascinating thing about the mobile industry is how everyone

pushes each other to create better and better products (which can often be interpreted as plagiarism). There's no denying the massive impact Apple [has] had on the industry though, forcing everyone else to rethink how they prioritize different aspects of the product. I'd say Google [is] right up there too.

**What is your operating system of choice?**

On mobile? Android. For desktops? OS X. For laptops? Chrome OS if your usage model fits it, else OS X too.

**What are your favorite gadget names?**

The classic Motorola RAZR has to be one of the best naming successes of all time; I like the way that Motorola created the RAZR MAXX name too — it's easy to understand what the branding signifies. The flip side is that they have diluted the RAZR brand unnecessarily with a bunch of mediocre products. I'm generally a fan of a product name that tells you something about a key aspect of the product and the MAXX is a great example of that. I'm really into health-tracking devices at the moment (I think that there is a revolution coming soon as to how that mass of data gets used) and the Fitbit is a great gadget name. Is a Nespresso machine a gadget? That's a cool name.







The Samsung Chromebook 550, for all your browser-based needs.

### **What are your least favorite?**

I'm not a big fan at all of successive generations of product sharing the same name. iPads, MacBooks and now the Nexus 7 too. It just makes searching for information about them, accessories for them, etc. a pain in the posterior. Some of my Twitter followers have argued that it works for cars and, well, yes — it does — but that's a bit different. While we're talking cars, it annoys me that numeric car designations for some manufacturers (BMW, Mercedes, etc.) used to mean something and actually inform you about the vehicle's engine capacity, but they are now just seemingly arbitrary numbers.

### **Which app do you depend on most?**

Chrome, whatever device I'm on. I spend most of my time in a browser nowadays and it's incredible

how successful Chrome has become in a market that was not long ago dominated by some seriously big players. Aside from that, I've used Tasker for Android to automate a huge number of things on my device — it's awesome.

### **What traits do you most deplore in a smartphone?**

If a device's battery can't make it through a day of my regular usage, then it's dead to me. Another frustration is when you pick up a device and there [are] software changes for the sake of it — while not everyone likes HTC's Sense or Samsung's TouchWiz, they are genuine attempts to improve the user experience. Quite a few manufacturers seem to change things for the sake of it and it's infuriating.

### **Which do you most admire?**

As a father to a daughter, one of the most important things in my device now is a decent camera. I have a lot of respect for HTC and Nokia for their respective efforts to redefine mobile cameras and while the UltraPixel camera on the One can take some astonishingly good pictures at times, Nokia's (proper) PureView cameras really are on another level.

### **What is your idea of the perfect device?**

An HTC One with better battery



“...My parents bought my brother and [me] a ZX Spectrum 48K. It was amazing and I was immediately hooked on programming it.”

life (and maybe a higher real pixel count in the UltraPixel camera).

**What is your earliest gadget memory?**

One Christmas, my parents bought my brother and [me] a ZX Spectrum 48K. It was amazing and I was immediately hooked on

programming it! My dad recounts a story about how he had to take it back to the shop three times just to get a program working to write “Merry Christmas Paul and Lee” over and over on the screen — I feel a little bit bad about that every time I hear it!

**What technological advancement do you most admire?**

Digital phones with SMS capability hit the market when I was about 18. Text messaging really changed our lives back then and there were some incredibly innovative services built around the technology. Ubiquitous GPS-en-

Programmable 8-bit home computing from 1982, the ZX Spectrum from Sinclair.





abled devices comes a close second, although I wonder if we're really making the most of location as a context on our devices as yet.

**Which do you most despise?**

Satellite TV provider encryption lock-in. It is incredibly frustrating that the encryption used on satellite broadcasts here on Sky TV in the UK isn't licensed to anyone else and we're forced to use the providers' boxes. I want a TiVo on Sky. I want a Sky-integrated Google TV. But it's just not possible.

**What fault are you most tolerant of in a gadget?**

I am very tolerant of subpar voice quality. Like many, I rarely use my phone to actually talk to people (to a fault).

**Which are you most intolerant of?**

Turning on my Xbox 360 and having to wait an age to play while it "downloads updates..."

**"I am very tolerant of subpar voice quality. Like many I rarely use my phone to actually talk to people (to a fault)."**

**When has your smartphone been of the most help?**

Definitely when abroad and using the device for navigation. Although Google Maps is excellent, there's still space in the market for onboard navigation solutions like CoPilot (my preferred choice) so you can use them without a data connection.

**What device do you covet most?**

Right now, Google Glass. It does have massive social implications and it will be very interesting to see what happens when it goes mass market, but I can't wait to get my hands on it.

**If you could change one thing about your phone what would it be?**

Better battery life!


**What does being connected mean to you?**

Being connected means having anything I want to know at my fingertips wherever I am.

**When are you least likely to reply to an email?**

In the cinema!

**When did you last disconnect?**

I've just come back from two weeks in Dordogne, France, where I disconnected from all work commitments. It was liberating! 



# SONY NEX-5N

**A GOOD CAMERA** should feel like a sidearm — a quick-draw shooter that you can easily carry with you. For me, that's the Sony NEX-5N.

Sony's choice of form factor goes a long way here. Like many NEX cameras, the 5N is small enough to easily chuck in a bag; with shorter lenses, it's also very light. I can shoot one-handed with ease. What really sells me on the 5N, though, is the touch-screen. While touch is no longer a rarity in the world of mirrorless cams, I'm still thankful for the feature every time I tap to focus on a tricky subject. The display is convenient enough that I'd rather buy the NEX-5R or future 5-series cameras, at least so long as the performance is up to par.

As it stands, the 5N is more than capable... most of the time,

at least. The camera holds up well enough in low light when I'm shooting with wide apertures and high ISO levels (usually 1600 or 3200), but it's in bright light that it really shines. Colors pop without becoming lurid, which has made the 5N especially great for capturing flowers. The 18-55mm kit lens I most often use has its barrel-distortion problems, but it's easily capable of brag-worthy photos with careful control. My real hangups with the 5N are its short (if tolerable) battery life and its sometimes pokey autofocus. It often needs a recharge after a few hours of heavy use, and it's not great at adjusting to significant changes in subject distance.

You can't buy a fresh 5N in stores, so the real question is whether the camera is worth buying used versus a 5R or even the NEX-3N. In short: if you can get a kit for significantly less than the 3N's \$500 asking price, go for it. You won't get the built-in flash of the 3N or the WiFi of the 5R, but you will get a reliable design that still claims advantages over Sony's entry-level NEX line. It's hard to think of a better way to get started with amateur photography. — *Jon Fingas*





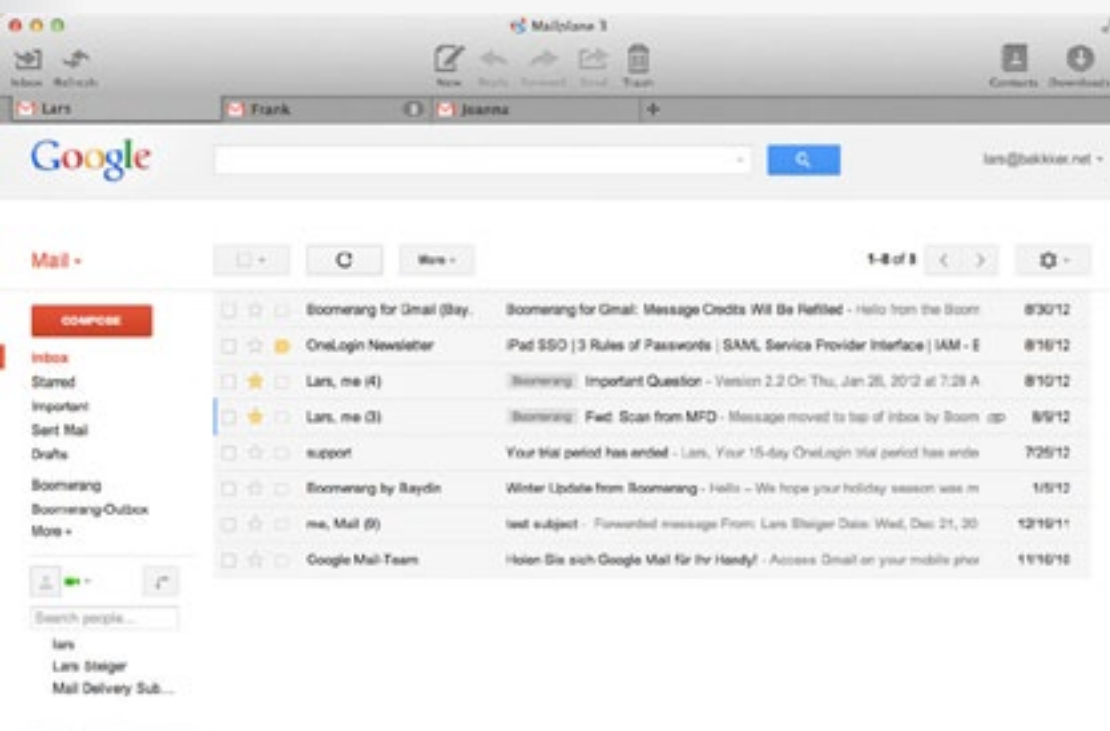
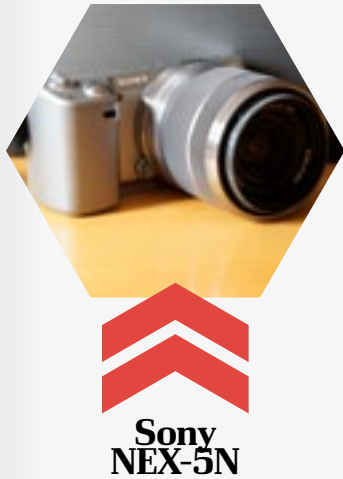
# MAILPLANE 3

**IT'S QUITE POSSIBLE** I've overlooked this trend up until now, but it all hit home with the latest iteration of Mailplane. AgileBits is a software company best known for 1Password. It's a stellar program, but it's a wallet killer as well. You see, not only do you need to pay for various versions of 1Password for each platform you use, but also the latest version of the software isn't provided gratis. Much like Adobe's Creative Suite, app providers aren't exactly giving away new editions. This has historically been acceptable in the boxed-software realm, but for whatever reason, apps have largely been updated for free.

Mailplane is yet another app that's maturing, but the new version most certainly isn't a courtesy update. The third version of the fanciful Gmail wrapper is even better than the prior one (which I gushed all over in

an earlier IRL), but it'll cost you \$25. The new version is sleeker and fully compatible with Gmail's new compose window, but it also adds a tabbed experience that enables you to open up numerous Gmail and Google Calendar accounts. (And yes, you can use keyboard shortcuts to hop between 'em, just as you can when cruising through Firefox tabs.)

I'm an unabashed Gmail power user, and Mailplane 3 feels like a worthwhile update. There's just something delightful about being able to Command + Tab to my Gmail or Google Calendar instance, versus sifting through untold tabs in a browser. There's also an option to kill all ads, which makes for an even more beautiful view. It's worth noting, however, that with this version, Mailplane ceases to be compatible with Growl (a heralded OS X notification system), but it *does* work swimmingly with Apple's own Notification Center. I figured this change would bother me a lot more than it actually has. Give it a try if you're a Mac loyalist and swear by Gmail — there's a 15-day free trial available, and all its features can be used during that window. — *Darren Murph*



The week that was in 140 characters or less

# Self-Driving Safely, OverXposure and Hack Attack

DISTRO  
08.30.13

ESC

REHASHED

@mgraftx

I like the idea of self driving cars (Nissan, Google).  
The first feature should be built in breathalyzers  
required to disengage auto drive.

@Tim\_Stevens

Here's the tl;dr Tech  
Overload: Ballmer's  
out, Samsung Galaxy  
Gear looks legit, 35  
years for Manning,  
champagne dreams  
of the iPhone 5S.

@legoalcubo

So now we have a normal  
Moto X, a "designed by  
you" version that is an  
AT&T exclusive, a Moto  
X Developer Edition and  
a future Moto X GPE?

@nickbilton

Such a bizarre feeling when your site is being hacked  
& there's nothing you can do. It's like being stung by  
invisible bees.

@MikeIsaac

this is all because of twerking — we brought these  
hacks down upon ourselves

THE STRIP

BY SHANNON WHEELER

## GAG REFLEX





DISTRO  
08.30.13

ESC

TIME  
MACHINES



**WHAT IS THIS?**  
TOUCH TO FIND OUT



CREDIT: EVAN-AMOS / WIKIMEDIA COMMONS





## GAME GENIE

Problems with the boss? Having difficulty accomplishing those troublesome tasks? Need a do-over? Well, back in the days of classic home and portable gaming (what did you think we meant?), you had a free pass in the form of Galoob's Game Genie. The NES version shown above worked as a go-between, slotting directly into the console, with cartridges plugging into the Game Genie. Armed with the right codes, you could more easily beat the boss, receive extra lives and generally boost your ability to kick butt. The Genie came in different flavors for most consoles, as well as portables like the Game Boy and Game Gear. Nintendo wasn't so keen on the whole idea and, according to an article by professor Eric E. Johnson, even sued Galoob on the basis that it "infringed its copyrights by creating 'derivative works.'" The courts eventually sided with Galoob stating that "the Game Genie does not contain, produce or duplicate the original game in any lasting form." So, game on!



Game Genie also offered a top-loading model for the SNES.







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